

R-1276-1-ARPA  
October 1975

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# A New (Revised) Tabulation of the Scripps Topography on a 1° Global Grid. Part I: Terrain Heights

W. L. Gates and A. B. Nelson

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A Report prepared for  
DEFENSE ADVANCED RESEARCH PROJECTS AGENCY

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**Rand**  
SANTA MONICA, CA. 90406



## PREFACE

This report is a revision of the earlier tabulation of global terrain heights issued as R-1276-ARPA in November 1973, and corrects systematic errors which were present in the tabulations poleward of 50°. Figures 1 through 5, associated with the tabulation's statistical summary, have also been recomputed. The related tabulation of ocean depths is given in R-1277-1-ARPA.

We would like to thank L. J. Lewis of the Geophysical Fluid Dynamics Laboratory, NOAA, for calling our attention to the previous tabulation's errors, and L. D. Bregman for his review of the newly tabulated data.



## SUMMARY

The world-wide terrain height data prepared at the Scripps Institution of Oceanography have been newly revised, and are herewith retabulated on a  $1^\circ$  grid. The revisions to the original Scripps data include the insertion of the elevation of the surface of lakes, the negative elevation of land areas lying below sea level, and the elevation of several heretofore omitted islands. A number of changes of land elevation near coasts have also been made, including some apparent errors in the original data. The new tabulations are summarized in the form of a global analysis, histograms, and zonal averages.



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## I. INTRODUCTION

In numerical simulations of atmospheric flow the terrain height is often needed as an input boundary condition. For small-scale problems, detailed local topographic information is usually available; in the case of large-scale problems, however, such as global circulation studies, the terrain height on an appropriate world-wide grid has been less readily available. Recognizing this need a number of years ago, Berkofsky and Bertoni (1955) published a tabulation of the topographic heights averaged over 5° latitude-longitude areas for the entire earth. These data were themselves obtained by averaging the values at 1° intervals, found by visual inspection of aeronautical charts. Because they are used in many applications, these data are often interpolated onto other grids, with a consequent degradation of both accuracy and detail.

The need for a more detailed topographic data source was also recognized by Smith, Menard, and Sharman (1966), who have presented topographic data over most of the globe at 1° intervals. Although these data undoubtedly constitute the best source of large-scale continental elevations available, they are in a format which does not readily lend itself to many applications. It is the purpose of this report to present these Scripps data in a new and extended tabulation for the entire globe at 1° intervals, in the hope that it will prove a more convenient source for further use. A companion tabulation of the Scripps ocean depth data may be found in R-1277-1-ARPA (Gates and Nelson, 1975).

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## II. DATA PROCESSING AND REVISION

Details of the data sources and estimation methods used in the original Scripps tabulation are given by Smith, Menard, and Sharman (1966). In order to produce a uniform listing on a  $1^\circ$  global grid, it was necessary to interpolate these data with respect to longitude in the higher latitudes. In the Scripps tabulation, the continental elevations are given to the nearest 100 m every  $2^\circ$  of longitude at latitudes  $50^\circ$  through  $69^\circ$ , every  $5^\circ$  longitude at latitudes  $70^\circ$  through  $79^\circ$ , and every  $10^\circ$  of longitude at latitudes  $80^\circ$  through  $89^\circ$ . The missing data for each degree of longitude between latitudes  $50^\circ$  and the poles were obtained by a linear east-west interpolation of the given Scripps data. In the previous Rand tabulation (R-1276-ARPA, Gates and Nelson, 1973), these data were inadvertently assigned to the westernmost  $1^\circ$  longitude interval of the original  $2^\circ$ ,  $5^\circ$  and  $10^\circ$  longitude tabulations poleward of  $50^\circ$  latitude. The subsequent longitudinal interpolations to  $1^\circ$  intervals were therefore erroneous, and have been corrected in the present report.

This fully interpolated data set was then reviewed for consistency of coastal outlines, and a number of changes were made, particularly in the Pacific and Arctic regions. These revisions consisted (with only one exception) of the assignment as land areas of several dozen  $1^\circ$  squares previously identified as ocean. The tabulations were next revised by the insertion of the elevation of the surface of those lakes resolved by the grid, replacing the lake bottom elevations contained in the original listing. These data were determined from world maps on a scale of 1:11,000,000 prepared by the U.S. Army Topographic Command and Naval Oceanographic Office (1971). These lake surface data are denoted by the subscript L in the tabulation, and represent the Aral Sea, the lakes Baikal and Balkhash, the Caspian Sea, and the lakes Chad, Erie, Eyre, Great Bear, Great Slave, Huron, Lodoga, Michigan, Nyasa, Onega, Ontario, Reindeer, Superior, Tanganyika, Victoria, and Winnipeg.

The tabulations were next revised by the inclusion of a number of islands omitted in the original Scripps listings (in addition to the occasional revision of the boundaries of listed islands as noted above). Newly tabulated are the islands of Hawaii, Kodiak, Komsomolets, New Caledonia, Nordaustlandet, Papua, and West Falkland. A final revision of the data resulted from a review of the tabulated terrain heights to detect gross errors and inconsistencies. A number of such corrections were necessary at scattered points, where the elevations were evidently originally tabulated in meters rather than decameters. A record of these and all other changes to the original Scripps tabulation is available for reference.

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### III. STATISTICAL SUMMARY

In addition to the tabulations themselves, it is of interest to give a few overall characteristics of the global topography. In Fig. 1 we show the continental outlines as resolved by the 1° grid. Figure 2 illustrates an analysis of the terrain height data, which serves to identify the major topographic features of the world.

In Fig. 3a the tabulated data are shown in the form of a histogram at 500-m intervals. We note in particular that more than half of the 22,537 tabulated elevations (on a 1° grid) are below 1000 m, and that there is a secondary maximum of terrain height frequency between 3000 and 3500 m. This histogram, however, overemphasizes the terrain heights in higher latitudes by treating all tabulated data equally. The histogram of actual surface area occupied by land in 500-m elevation intervals is shown in Fig. 3b. This distribution was found by weighting the data in Fig. 3a by the areas appropriate to each land point.

In Fig. 4a the tabulated data are shown in terms of zonal averages, wherein the maximum height near 35°N is produced by both the Rockies and the Himalayas. This figure, however, also overemphasizes the higher-latitude terrain heights by treating all 1° data equally. The corresponding zonal averages found by weighting the data of Fig. 4a by the cosine of latitude are shown in Fig. 4b; here a greater degree of latitudinal symmetry is evident. These data give an area-weighted mean terrain height of 678 m in the northern hemisphere and 658 m in the southern hemisphere, with a global mean of 668 m. The tabulated data have also been converted into the fraction representing land in Fig. 5a, and in terms of the actual land area per degree of latitude in Fig. 5b.

Although we have not systematically compared the tabulated Scripps topographic data with other data sources, we have noted a number of apparent omissions and discrepancies. For example, the low-lying land at the northern end of the Caspian Sea was originally listed as above sea level, the height given for Punta Eugenia in Baja California was excessive, and the island of Hawaii was not represented. These and other errors were corrected by the insertion of the surface elevations of all lakes resolved by the grid and by review of all coastal and island regions. The tabulations were also visually checked for local terrain height errors. No revisions were made at locations covered by permanent ice (as in Greenland and Antarctica); here the ice is treated as though it were land and its surface elevation is tabulated.

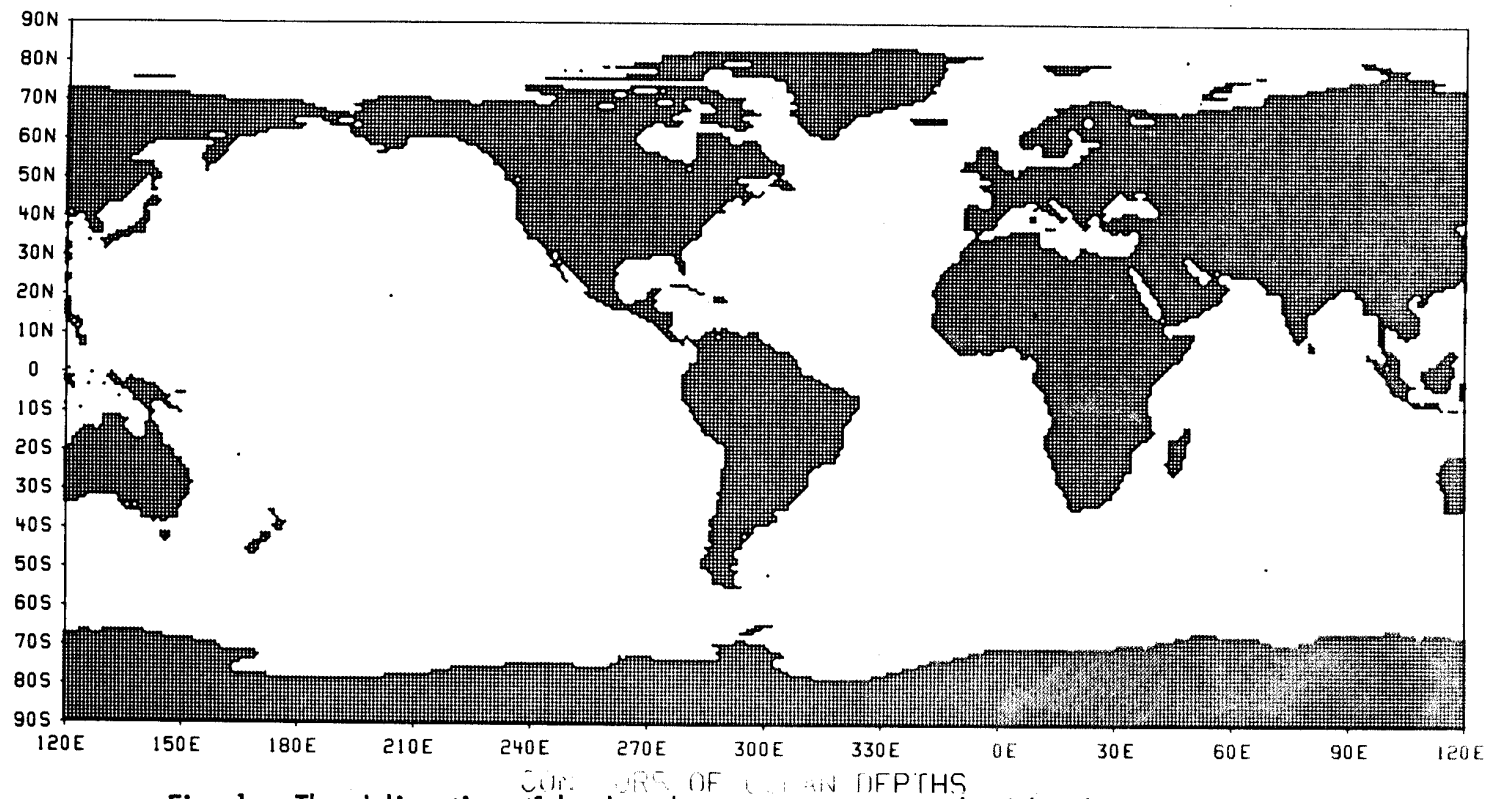


Fig. 1—The delineation of land and ocean areas as resolved by the 1 global grid.  
The grid itself is shown by dots over the land areas .

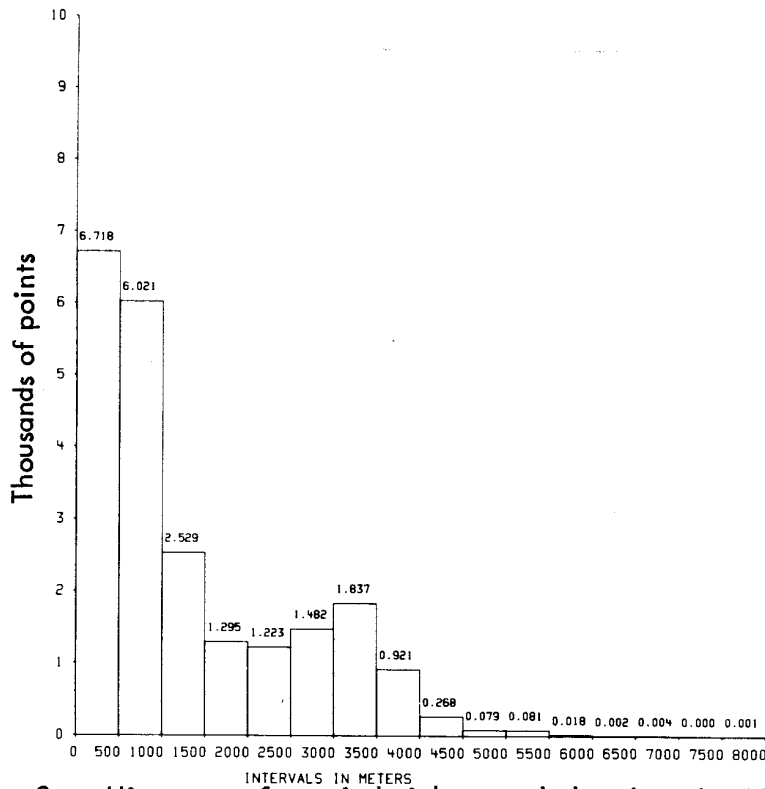


Fig. 3a—Histogram of terrain heights as tabulated on the 1° grid treating all 22,537 points equally. Those points below sea-level are here included in the 0—500-m category.

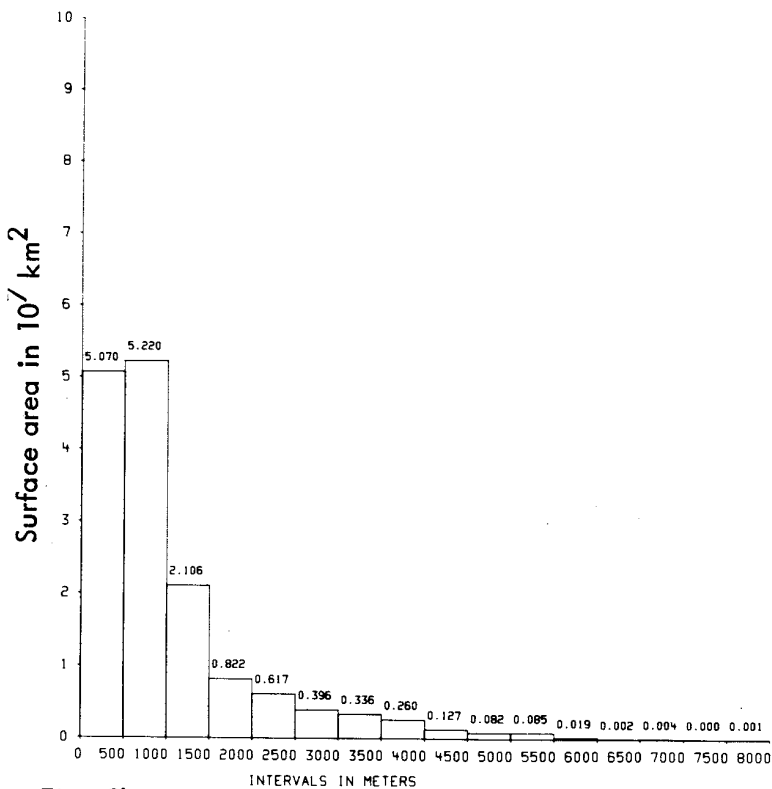


Fig. 3b—Histogram of surface area represented by the land in 500-m height intervals.

90S 80S 70S 60S 50S 40S 30S 20S 10S 0 10N 20N 30N 40N 50N 60N 70N 80N 90N

Fig. 4a—Meridional variation of the zonal average terrain height as tabulated on the 1° grid. Each land point is treated equally (as in Fig. 3a), with ocean points disregarded.

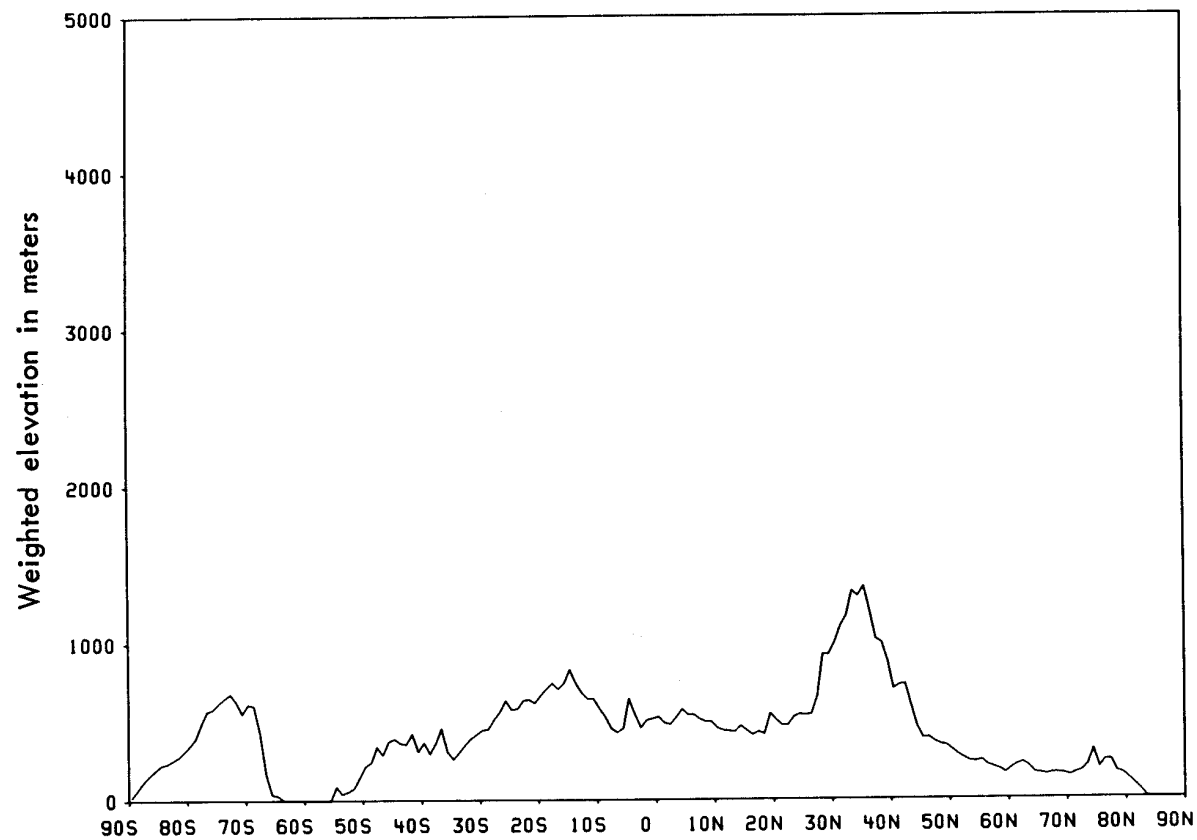


Fig. 4b—Meridional variation of the zonal average terrain height multiplied by the cosine of latitude, with ocean points disregarded.

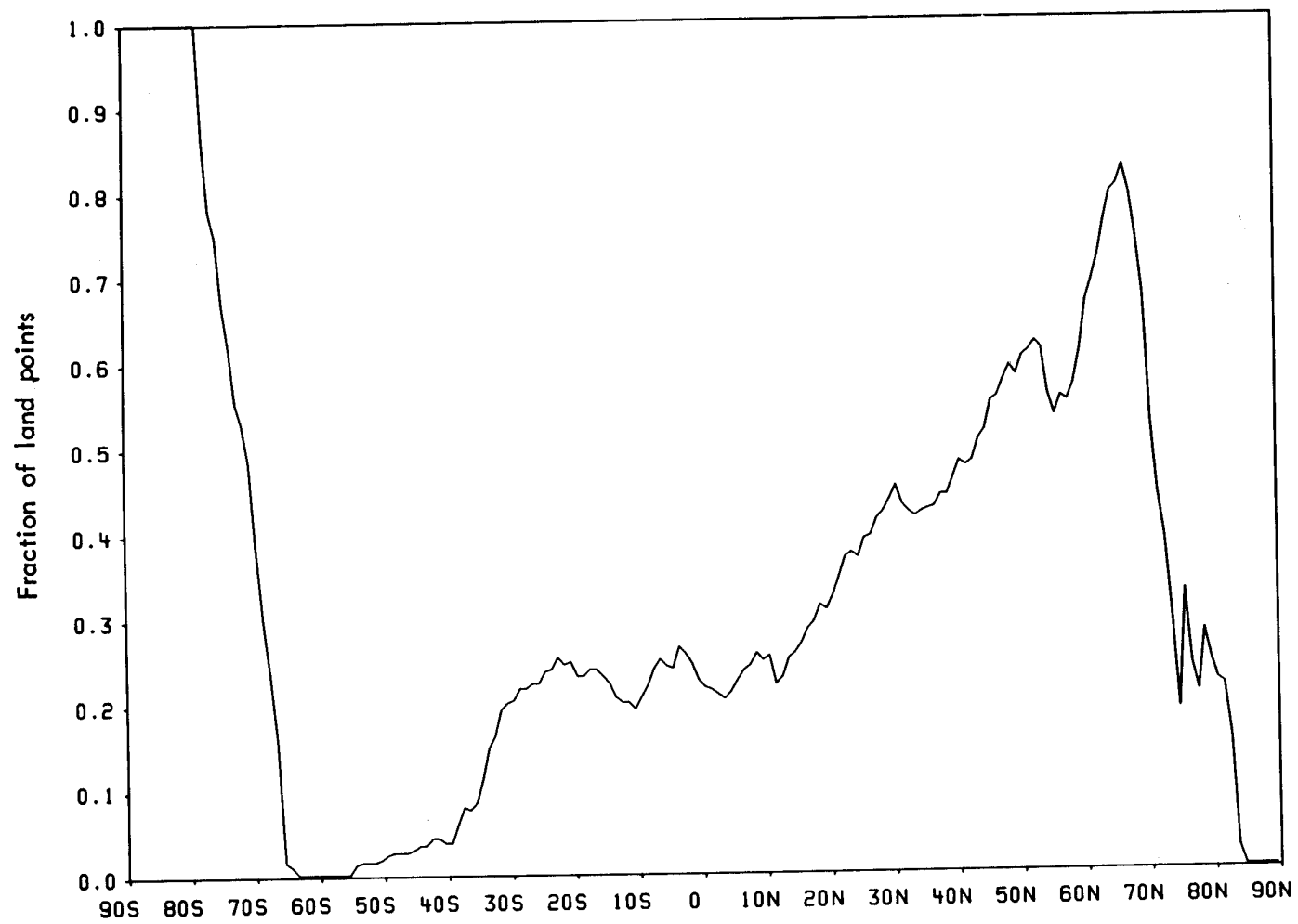


Fig. 5a—Meridional variation of the fraction of the tabulated points representing land.

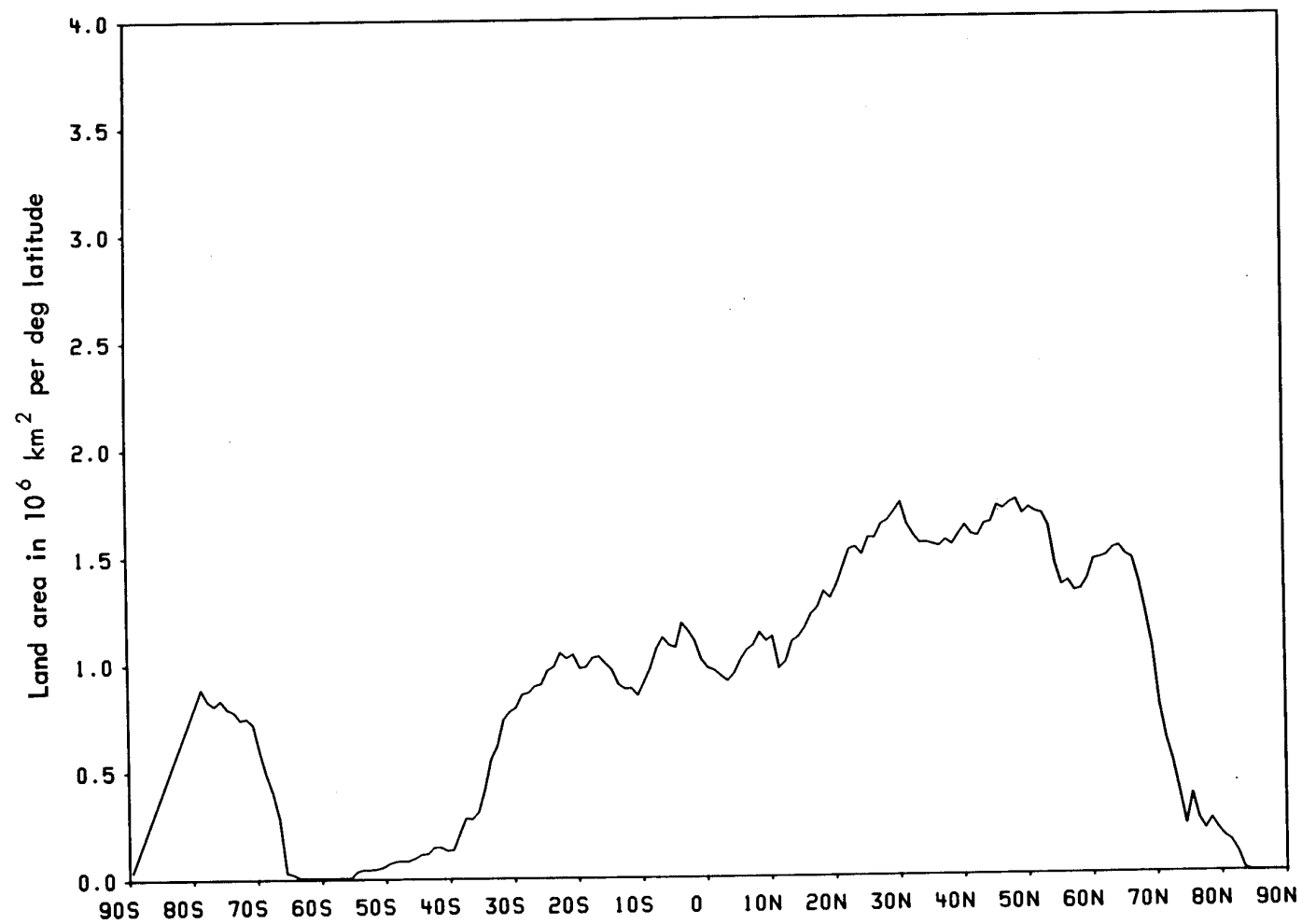


Fig. 5b—Meridional variation of the area covered by land (per degree of latitude).

#### IV. TOPOGRAPHY TABULATION (TERRAIN HEIGHTS)

In the following tabulation the original Scripps continental elevations with respect to mean sea level (and those interpolated over longitude at latitudes poleward of 50°) are presented in the form of grid-point values on a 1° global grid. These values are given in decameters (= 10 m), with asterisks denoting the locations of ocean. All longitudes are referenced eastward from Greenwich. The quadrant identification used in the original Scripps tabulation by Smith, Menard, and Sharman (1966) has here been transformed to the true latitude and longitude of the center of the 1° squares for which the listed height is the estimated average.

The locations of lakes may be identified by the subscript L following the tabulation of the lake's surface elevation. The locations of permanent ice-covered land are not separately identified, and the ice's surface elevation is tabulated as though it were land. Negative numbers denote land below mean sea level, while zero denotes land at sea level (to the nearest decameter). Ocean depths are tabulated in Part II of this report (R-1277-1-ARPA).

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	0
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	*	*	*
71.5N	*	*	*	*	*	*	*	*	*	*	*	*
70.5N	*	*	*	*	*	*	*	*	*	*	*	*
69.5N	*	*	*	*	*	*	*	*	*	*	*	*
68.5N	*	*	*	*	*	*	*	*	*	*	*	*
67.5N	*	*	*	*	*	*	*	*	*	*	*	*
66.5N	*	*	*	*	*	*	*	*	*	*	*	*
65.5N	*	*	*	*	*	*	*	*	*	*	*	1
64.5N	*	*	*	*	*	*	*	*	*	*	17	42
63.5N	*	*	*	*	*	*	*	*	2	17	32	52
62.5N	*	*	*	*	*	*	2	29	66	84	81	85
61.5N	*	*	*	*	*	2	47	82	107	107	82	70
60.5N	*	*	*	*	*	5	55	75	65	51	34	25
59.5N	*	*	*	*	*	5	55	70	50	32	17	12
58.5N	*	*	*	*	*	*	17	20	1	*	*	0
57.5N	*	*	*	*	*	*	*	*	*	*	*	1
56.5N	*	*	*	*	*	*	*	*	*	*	*	1
55.5N	*	*	*	*	*	*	*	*	*	*	*	*
54.5N	*	*	*	*	*	*	*	*	*	*	*	*
53.5N	*	*	*	*	*	*	*	0	4	6	7	7
52.5N	11	5	5	2	*	0	6	12	17	20	20	17
51.5N	16	12	7	2	*	1	14	22	27	30	30	27
50.5N	15	16	17	18	19	22	27	30	30	32	37	40
49.5N	8	10	10	20	20	20	30	30	20	30	30	40
48.5N	20	20	20	20	20	20	30	30	50	50	50	40
47.5N	10	20	20	30	40	25	50	40	80	90	110	90
46.5N	20	30	30	30	40	50	75	230	200	190	150	110
45.5N	20	30	70	60	55	40	220	120	30	30	35	20

## DEGREES EAST LONGITUDE

	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5
44.5N	20	20	50	80	30	120	220	90	5	25	60	25
43.5N	30	20	40	10	10	18	20	*	*	*	10	30
42.5N	100	100	80	*	*	*	*	*	*	10	*	10
41.5N	20	30	*	*	*	*	*	*	*	*	*	*
40.5N	6	*	*	*	*	*	*	*	20	40	*	*
39.5N	*	*	*	*	*	*	*	*	10	0	*	*
38.5N	*	*	*	*	*	*	*	*	*	*	*	*
37.5N	*	*	*	*	*	*	*	*	*	*	*	*
36.5N	*	*	*	40	45	40	50	40	45	50	15	*
35.5N	50	70	80	70	60	60	110	90	80	90	10	*
34.5N	90	90	80	90	50	20	20	30	70	50	10	*
33.5N	100	100	80	70	40	20	20	20	10	20	10	*
32.5N	85	70	70	60	30	20	20	10	20	30	25	10
31.5N	70	60	50	40	20	20	20	20	30	30	40	40
30.5N	50	50	40	30	20	20	20	20	30	30	40	40
29.5N	40	50	50	40	30	25	26	30	40	40	50	50
28.5N	40	50	50	50	50	40	30	30	40	40	40	40
27.5N	40	50	40	40	40	50	40	40	40	40	40	40
26.5N	40	50	40	50	50	70	50	50	60	50	40	40
25.5N	40	40	50	55	80	90	100	110	120	120	60	80
24.5N	40	50	50	60	70	110	130	130	80	140	70	85
23.5N	40	40	40	50	70	170	150	120	100	70	80	80
22.5N	30	40	40	50	70	110	80	80	70	50	60	60
21.5N	40	40	40	40	60	80	75	50	50	40	50	60
20.5N	40	50	50	50	50	50	50	50	70	40	40	50
19.5N	50	50	50	40	50	40	40	50	90	50	40	50
18.5N	40	50	40	40	40	40	40	50	70	50	40	40
17.5N	40	50	40	40	40	40	40	50	80	50	40	40
16.5N	40	40	40	40	40	40	40	50	50	50	40	40
15.5N	40	40	40	40	40	40	40	40	50	50	40	40
14.5N	30	30	40	40	40	40	40	40	40	40	40	40
13.5N	30	30	30	30	40	40	40	40	40	40	40	40
12.5N	30	30	30	30	30	40	40	50	50	40	40	40
11.5N	30	30	30	30	20	40	50	60	50	40	40	40
10.5N	20	30	30	30	20	30	40	50	80	70	40	40
9.5N	20	30	30	30	20	30	30	50	80	70	25	20
8.5N	30	25	20	30	30	20	20	30	25	20	20	50
7.5N	30	20	20	20	30	40	30	30	20	30	30	60
6.5N	20	0	*	*	*	20	20	20	30	60	120	90
5.5N	*	*	*	*	*	*	10	10	30	60	110	70
4.5N	*	*	*	*	*	*	0	0	*	70	40	50
3.5N	*	*	*	*	*	*	*	*	*	*	30	50
2.5N	*	*	*	*	*	*	*	*	*	*	30	50
1.5N	*	*	*	*</								

## DEGREES EAST LONGITUDE

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5
45.5S	*	*	*	*	*	*	*	*	*	*	*	*
46.5S	*	*	*	*	*	*	*	*	*	*	*	*
47.5S	*	*	*	*	*	*	*	*	*	*	*	*
48.5S	*	*	*	*	*	*	*	*	*	*	*	*
49.5S	*	*	*	*	*	*	*	*	*	*	*	*
50.5S	*	*	*	*	*	*	*	*	*	*	*	*
51.5S	*	*	*	*	*	*	*	*	*	*	*	*
52.5S	*	*	*	*	*	*	*	*	*	*	*	*
53.5S	*	*	*	*	*	*	*	*	*	*	*	*
54.5S	*	*	*	*	*	*	*	*	*	*	*	*
55.5S	*	*	*	*	*	*	*	*	*	*	*	*
56.5S	*	*	*	*	*	*	*	*	*	*	*	*
57.5S	*	*	*	*	*	*	*	*	*	*	*	*
58.5S	*	*	*	*	*	*	*	*	*	*	*	*
59.5S	*	*	*	*	*	*	*	*	*	*	*	*
60.5S	*	*	*	*	*	*	*	*	*	*	*	*
61.5S	*	*	*	*	*	*	*	*	*	*	*	*
62.5S	*	*	*	*	*	*	*	*	*	*	*	*
63.5S	*	*	*	*	*	*	*	*	*	*	*	*
64.5S	*	*	*	*	*	*	*	*	*	*	*	*
65.5S	*	*	*	*	*	*	*	*	*	*	*	*
66.5S	*	*	*	*	*	*	*	*	*	*	*	*
67.5S	*	*	*	*	*	*	*	*	*	*	*	*
68.5S	*	*	*	*	*	*	*	*	*	*	*	*
69.5S	*	*	*	*	*	*	*	*	*	*	*	*
70.5S	10	10	10	16	22	28	34	40	40	40	40	40
71.5S	104	127	150	152	154	156	158	160	164	168	172	176
72.5S	192	221	250	260	270	280	290	300	308	316	324	332
73.5S	250	275	300	318	336	354	372	390	388	386	384	382
74.5S	272	281	290	306	322	338	354	370	372	374	376	378
75.5S	301	310	320	326	332	338	344	350	356	362	368	374
76.5S	308	319	330	334	338	342	346	350	354	358	362	366
77.5S	308	319	330	334	338	342	346	350	354	358	362	366
78.5S	302	311	320	324	328	332	336	340	344	348	352	356
79.5S	296	303	310	314	318	322	326	330	334	338	342	346
80.5S	275	280	286	292	297	302	306	310	314	318	322	326
81.5S	269	273	278	283	288	292	296	300	304	308	312	316
82.5S	263	267	270	274	278	281	284	287	290	293	296	299
83.5S	263	267	270	274	278	280	281	282	283	284	285	286
84.5S	263	267	270	274	278	280	281	282	283	284	285	286
85.5S	257	260	263	266	269	270	271	272	273	274	275	276
86.5S	261	263	265	267	269	270	271	272	273	274	275	276
87.5S	265	266	267	268	269	270	270	270	270	270	270	270
88.5S	266	267	268	269	269	270	270	270	270	270	270	270
89.5S	270	270	270	270	270	270	271	272	273	274	275	276

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS DEGREES EAST LONGITUDE												
	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	0	4	8	12	16	20	16	12	8	*	0	1
78.5N	0	4	8	12	16	20	16	12	8	4	*	*
77.5N	*	*	0	0	4	10	7	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	*	*	*
71.5N	*	*	*	*	*	*	*	*	*	*	*	*
70.5N	*	*	*	*	*	*	*	*	*	*	*	0
69.5N	*	*	*	*	*	*	5	17	32	42	47	50
68.5N	*	*	1	9	16	32	57	65	55	47	42	40
67.5N	*	*	*	22	87	112	97	77	52	35	25	20
66.5N	19	51	84	92	77	62	47	35	25	17	12	10
65.5N	44	74	91	90	70	52	37	25	15	6	*	*
64.5N	67	72	57	45	35	27	22	17	12	5	*	*
63.5N	77	75	45	27	22	17	12	7	*	0	3	6
62.5N	95	82	47	27	22	12	*	*	1	9	16	20
61.5N	70	60	40	25	15	6	*	*	*	0	6	12
60.5N	25	24	21	17	12	6	*	*	*	2	7	10
59.5N	17	20	20	17	12	7	2	*	*	*	*	*
58.5N	10	18	19	16	9	*	*	*	*	*	*	1
57.5N	14	20	20	16	9	*	*	*	*	*	*	1
56.5N	4	7	9	6	*	*	*	*	*	1	6	8
55.5N	*	*	*	*	*	*	*	*	*	3	8	12
54.5N	*	*	*	*	*	*	*	1	5	10	17	17
53.5N	8	8	7	7	8	8	9	10	10	12	17	20
52.5N	12	12	17	20	20	20	20	20	20	20	20	20
51.5N	22	20	20	20	20	20	20	20	20	20	20	20
50.5N	40	42	47	52	57	55	45	37	32	30	30	30
49.5N	40	50	40	90	70	70	90	110	120	70	70	60
48.5N	40	40	60	70	40	40	50	75	60	30	40	100
47.5N	100	100	100	70	30	20	20	20	20	20	50	60
46.5N	110	90	70	40	20	20	20	20	20	20	50	50
45.5N	5	5	40	20	20	30	20	20	20	10	50	70

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5
44.5N	0	*	*	55	70	55	50	40	20	50	40	30
43.5N	50	5	*	*	10	70	80	80	70	55	60	20
42.5N	25	70	0	*	*	*	5	80	80	70	85	70
41.5N	*	35	50	30	*	*	*	5	40	40	30	40
40.5N	*	*	*	50	15	0	*	0	40	50	40	30
39.5N	*	*	*	*	40	*	*	*	15	50	30	*
38.5N	*	*	*	*	*	*	*	*	*	15	0	0
37.5N	0	20	40	*	*	*	*	*	*	*	20	*
36.5N	*	*	*	*	*	*	*	*	*	*	*	*
35.5N	*	*	*	*	*	*	*	*	*	*	*	*
34.5N	*	*	*	*	*	*	*	*	*	*	*	*
33.5N	*	*	*	*	*	*	*	*	*	*	*	*
32.5N	10	20	0	*	*	*	*	*	*	20	15	*
31.5N	45	40	20	5	*	*	*	*	*	20	20	20
30.5N	40	50	30	20	10	5	*	*	5	10	10	10
29.5N	60	60	50	30	20	20	10	10	10	10	10	10
28.5N	50	50	50	50	50	30	20	20	20	10	10	20
27.5N	40	50	50	40	40	50	50	25	20	20	20	20
26.5N	50	50	40	40	40	30	25	20	20	20	20	20
25.5N	60	50	50	40	40	40	30	20	20	25	30	30
24.5N	60	60	50	50	50	50	40	40	40	40	30	40
23.5N	80	70	60	60	60	60	60	60	50	40	35	50
22.5N	70	80	60	60	70	70	70	80	50	40	40	50
21.5N	50	50	50	70	100	120	160	80	50	40	40	50
20.5N	50	40	40	40	80	150	170	80	60	50	50	50
19.5N	40	40	40	40	60	70	90	50	50	50	50	60
18.5N	40	40	40	40	40	40	40	40	40	40	50	60
17.5N	40	40	40	40	40	50	50	40	40	50	50	60
16.5N	40	40	40	50	50	50	50	40	40	50	60	70
15.5N	30	30	40	40	40	40	40	40	40	50	70	80
14.5N	30	20	30	30	40	40	40	40	50	60	70	90
13.5N	30	20	28L	30	40	40	40	40	50	60	80	110
12.5N	30	30	30	30	40	40	40	50	50	60	80	120
11.5N	40	40	40	30	40	40	50	50	50	60	70	70
10.5N	40	50	40	40	40	40	40	40	40	50	50	50
9.5N	30	40	40	40	40	40	40	40	40	50	50	50
8.5N	40	50	40	40	40	40	40	40	50	50	50	50
7.5N	90	100	100	50	50	40	40	40	50	50	50	50
6.5N	80	100	110	100	70	50	50	50	50	50	50	50
5.5N	70	80	90	80	70	50	50	40	50	50	50	50
4.5N	60	75	70	60	50	40	40	50	50	50	50	50
3.5N	60	57	50	50	50	40	40	40	50	50	50	50
2.5N	60	60	50	40	40	40	40	40	40	40	40	40
1.5N	50	50	50	40	40	30	30	40	40	40	40	40
0.5N	40	50	50	40	40	30	30	30	30	40	40	50

[illegible][illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS DEGREES EAST LONGITUDE												
	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	2	4	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	*	*	*
71.5N	*	*	*	*	*	*	*	*	*	*	*	*
70.5N	0	0	5	10	4	*	*	*	*	*	*	*
69.5N	50	45	35	24	13	8	9	5	*	*	*	*
68.5N	40	39	36	36	39	37	32	25	15	10	10	9
67.5N	20	20	20	25	35	40	40	35	25	20	20	17
66.5N	10	12	17	20	20	17	12	9	6	2	*	0
65.5N	1	4	8	10	10	12	17	17	12	6	*	*
64.5N	4	8	9	12	17	20	20	17	12	8	5	2
63.5N	9	12	17	20	20	20	20	20	20	17	12	10
62.5N	20	20	20	17	12	12	17	20	20	17	12	12
61.5N	17	17	12	10	9	10	13	16	19	16	9	6
60.5N	9	7	3	1	2	4	6	7	9	10	10	10
59.5N	*	*	0	2	3	5	8	11	17	20	20	17
58.5N	4	5	6	7	8	7	11	11	15	20	20	31
57.5N	5	7	8	9	10	12	17	20	20	20	20	20
56.5N	9	12	17	20	20	20	20	20	20	20	20	20
55.5N	17	20	20	20	20	20	20	20	20	20	20	20
54.5N	12	12	17	20	20	20	20	20	20	20	20	20
53.5N	20	20	20	20	20	20	20	20	20	20	20	20
52.5N	20	20	20	20	20	20	20	20	20	20	20	20
51.5N	20	20	20	20	20	20	20	20	20	20	20	20
50.5N	30	27	22	20	20	20	20	20	20	20	20	20
49.5N	40	50	50	50	30	20	20	20	10	10	10	20
48.5N	110	40	30	30	30	20	20	20	20	20	20	10
47.5N	130	150	40	30	20	20	20	20	20	20	10	20
46.5N	40	60	60	20	20	10	0	*	0	0	0	*
45.5N	60	80	80	20	20	0	*	*	*	5	10	0

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5
44.5N	20	20	20	20	10	*	*	*	*	*	*	*
43.5N	20	20	30	20	*	*	*	*	*	*	*	*
42.5N	60	50	20	*	*	*	*	*	*	*	*	*
41.5N	80	50	20	40	*	*	*	*	25	70	80	35
40.5N	*	*	0	*	*	30	40	90	100	90	70	70
39.5N	*	*	15	25	40	80	90	70	80	90	100	110
38.5N	*	*	0	25	40	70	100	80	90	90	110	170
37.5N	*	*	*	35	60	100	90	100	120	100	150	110
36.5N	*	*	*	*	*	30	0	*	60	50	*	*
35.5N	*	*	*	*	*	*	*	*	*	*	*	*
34.5N	*	*	*	*	*	*	*	*	*	*	*	*
33.5N	*	*	*	*	*	*	*	*	*	*	*	50
32.5N	*	*	*	*	*	*	*	*	*	*	*	35
31.5N	10	0	*	*	*	*	*	*	*	*	15	50
30.5N	10	20	20	20	10	10	10	10	20	30	40	90
29.5N	10	20	20	20	20	20	20	20	30	70	40	130
28.5N	20	20	20	20	20	30	20	40	60	40	40	150
27.5N	20	20	20	20	35	30	20	25	80	25	*	0
26.5N	30	30	25	40	60	35	25	20	30	60	*	*
25.5N	40	40	40	45	50	50	40	35	20	60	10	*
24.5N	40	50	50	45	40	40	50	40	20	40	80	*
23.5N	50	50	50	50	40	40	50	45	23	40	60	20
22.5N	50	60	50	50	40	40	50	40	20	45	55	55
21.5N	50	60	50	50	40	40	30	35	40	50	50	70
20.5N	50	60	50	50	40	40	20	40	50	50	50	80
19.5N	60	60	60	50	50	40	30	40	40	40	50	50
18.5N	60	70	60	50	50	40	40	30	40	40	50	50
17.5N	70	70	70	50	50	50	40	40	40	40	40	40
16.5N	70	80	70	60	50	50	50	50	40	40	40	40
15.5N	80	90	80	70	60	60	50	50	40	40	50	50
14.5N	100	100	90	70	60	60	50	40	40	40	50	50
13.5N	150	90	80	60	60	60	50	40	40	40	50	60
12.5N	130	80	70	55	60	60	60	50	50	40	50	50
11.5N	70	50	50	50	50	60	70	65	50	40	50	90
10.5N	50	50	40	40	40	50	50	50	40	50	70	130
9.5N	50	50	50	50	50	50	40	50	40	50	110	160
8.5N	50	50	50	50	50	50	40	40	40	50	75	130
7.5N	60	50	50	50	50	50	40	40	50	50	60	190
6.5N	60	50	50	50	50	50	50	50	50	50	70	130
5.5N	50	50	50	60	50	50	50	50	50	50	80	80
4.5N	50	60	65	70	70	70	70	50	80	80	80	70
3.5N	50	50	60	70	80	90	90	80	90	100	100	50
2.5N	50	50	60	80	90	100	110	90	100	100	110	80
1.5N	50	50	50	70	80	90	100	90	110	120	140	130
0.5N	40	50	50	70	90	100	210	120	120	120	130	150

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5
0.5S	50	50	50	80	110	110	110	110	113L	113L	130	220
1.5S	50	50	50	80	170	230	130	110	113L	113L	140	200
2.5S	50	60	60	80	100	150	120	110	113L	110	120	150
3.5S	60	60	70	80	100	100	110	120	130	130	130	140
4.5S	60	70	70	80	90	90	100	110	130	140	150	190
5.5S	80	70	80	80	90	77L	100	110	120	140	130	150
6.5S	90	80	80	80	90	90	90	110	120	120	120	100
7.5S	90	90	80	90	90	100	100	110	110	110	100	110
8.5S	100	100	90	100	90	90	90	110	90	120	130	120
9.5S	100	90	90	90	90	90	100	110	110	120	160	80
10.5S	110	110	100	90	90	100	110	100	90	150	47L	90
11.5S	120	120	120	120	110	110	110	100	90	110	47L	70
12.5S	120	120	130	120	120	110	110	80	80	100	47L	90
13.5S	110	130	130	120	120	110	100	70	100	110	47L	90
14.5S	110	110	120	110	110	100	70	80	100	120	110	80
15.5S	100	110	110	110	100	90	50	65	55	70	90	70
16.5S	100	100	110	100	90	90	70	100	50	20	20	30
17.5S	90	90	100	89	80	90	90	100	60	20	10	20
18.5S	80	80	90	90	80	90	100	110	100	30	30	5
19.5S	80	80	80	90	90	110	110	90	90	30	5	*
20.5S	80	80	90	100	100	80	74	50	40	30	5	*
21.5S	80	80	80	80	70	50	40	40	30	20	20	*
22.5S	80	80	70	60	50	40	40	30	30	30	20	*
23.5S	80	80	80	80	90	100	40	40	30	20	20	*
24.5S	90	90	80	90	90	90	100	40	20	20	5	*
25.5S	90	100	100	100	100	140	200	50	0	*	*	*
26.5S	90	100	110	120	120	130	110	70	5	*	*	*
27.5S	110	110	120	130	140	160	150	65	*	*	*	*
28.5S	90	100	130	150	170	180	80	50	*	*	*	*
29.5S	90	120	155	185	250	210	70	*	*	*	*	*
30.5S	100	110	140	170	190	120	*	*	*	*	*	*
31.5S	140	105	165	140	120	0	*	*	*	*	*	*
32.5S	90	90	110	70	*	*	*	*	*	*	*	*
33.5S	40	30	20	*	*	*	*	*	*	*	*	*
34.5S	*	*	*	*	*	*	*	*	*	*	*	*
35.5S	*	*	*	*	*	*	*	*	*	*	*	*
36.5S	*	*	*	*	*	*	*	*	*	*	*	*
37.5S	*	*	*	*	*	*	*	*	*	*	*	*
38.5S	*	*	*	*	*	*	*	*	*	*	*	*
39.5S	*	*	*	*	*	*	*	*	*	*	*	*
40.5S	*	*	*	*	*	*	*	*	*	*	*	*
41.5S	*	*	*	*	*	*	*	*	*	*	*	*
42.5S	*	*	*	*	*	*	*	*	*	*	*	*
43.5S	*	*	*									

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	*	*	*
71.5N	*	*	*	*	*	*	*	*	*	*	*	*
70.5N	*	*	*	*	*	*	*	*	*	*	*	*
69.5N	*	*	*	*	*	*	*	*	*	*	*	*
68.5N	7	3	*	*	*	*	*	*	*	*	*	*
67.5N	12	9	8	7	6	5	5	4	3	2	*	*
66.5N	4	7	7	6	6	6	5	5	4	4	4	5
65.5N	*	*	*	*	2	5	5	5	4	5	7	11
64.5N	1	1	2	3	3	4	5	6	7	8	9	12
63.5N	10	10	10	10	10	10	10	10	10	10	10	12
62.5N	17	20	20	20	20	20	20	20	20	20	20	20
61.5N	9	12	17	20	20	20	20	20	20	20	20	20
60.5N	10	12	17	20	20	20	20	20	20	20	20	20
59.5N	12	12	17	20	20	20	20	20	20	20	20	20
58.5N	20	20	20	20	20	20	20	17	12	12	17	20
57.5N	20	20	20	20	20	17	12	10	10	12	17	20
56.5N	20	20	20	17	12	10	10	12	17	20	20	20
55.5N	20	20	20	20	20	20	20	20	20	20	20	20
54.5N	20	20	20	20	20	20	20	20	20	20	20	20
53.5N	20	20	20	20	20	20	20	20	20	20	20	20
52.5N	20	20	20	20	20	20	20	20	20	20	20	20
51.5N	20	20	20	20	20	20	20	20	20	20	20	20
50.5N	20	20	20	20	20	20	20	20	20	20	20	20
49.5N	20	20	20	20	20	20	20	20	20	20	20	10
48.5N	20	20	20	20	20	20	20	20	10	10	10	0
47.5N	20	20	20	20	20	20	10	10	10	10	-1	-1
46.5N	*	*	0	8	10	10	20	20	10	0	-1	-2
45.5N	*	0	12	10	20	20	20	20	10	10	-1	-31

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5
44.5N	*	*	*	50	100	110	90	40	20	10	-2	-3L
43.5N	*	*	*	*	50	350	290	110	45	20	20	-3L
42.5N	*	*	*	*	*	0	60	140	170	220	180	90
41.5N	*	*	*	*	*	0	210	210	80	50	45	200
40.5N	70	100	120	140	210	200	220	190	200	230	110	20
39.5N	130	140	130	160	200	230	250	370	170	210	170	70
38.5N	160	140	110	110	130	180	130	180	220	140	160	210
37.5N	60	70	60	70	80	60	100	190	250	150	210	180
36.5N	40	40	40	50	40	50	40	70	110	180	190	180
35.5N	40	40	50	45	25	30	30	20	60	80	190	230
34.5N	80	60	50	40	30	30	20	20	20	50	140	190
33.5N	70	60	60	50	50	50	20	20	20	30	90	130
32.5N	80	80	70	70	50	50	40	20	20	20	20	20
31.5N	80	80	75	60	50	50	50	40	20	20	20	20
30.5N	100	90	80	70	60	60	50	40	30	20	20	5
29.5N	100	100	90	80	70	60	60	50	40	30	30	10
28.5N	100	80	90	80	70	70	70	60	50	50	40	30
27.5N	160	90	90	70	70	90	80	70	60	60	50	40
26.5N	10	110	85	70	70	80	80	75	70	65	50	50
25.5N	*	80	80	60	70	70	90	85	85	85	70	60
24.5N	*	10	70	60	70	100	100	90	100	100	80	60
23.5N	*	*	0	50	70	110	120	100	100	90	80	60
22.5N	*	*	*	50	70	105	160	140	85	80	75	70
21.5N	70	*	*	40	100	200	110	90	85	80	80	75
20.5N	70	*	*	*	60	170	100	90	85	80	75	75
19.5N	80	*	*	*	*	50	150	100	90	85	80	75
18.5N	70	20	*	*	*	50	100	120	100	90	80	75
17.5N	50	40	50	*	*	*	40	100	90	90	80	75
16.5N	50	80	80	*	*	*	20	80	100	90	80	70
15.5N	50	75	110	20	*	*	0	80	180	85	75	70
14.5N	60	80	120	150	20	0	*	70	190	150	150	80
13.5N	70	100	210	170	40	50	0	80	110	80	0	*
12.5N	120	190	180	180	40	30	40	*	*	*	*	*
11.5N	160	200	200	190	80	30	20	*	*	*	*	*
10.5N	140	250	210	210	80	50	70	50	*	3	40	110
9.5N	170	190	210	200	80	100	130	110	100	100	80	80
8.5N	180	190	220	140	150	110	105	110	90	80	70	70
7.5N	190	190	180	190	170	100	80	90	80	70	50	40
6.5N	150	170	180	260	160	85	55	70	60	50	40	20
5.5N	90	120	170	120	80	60	70	50	40	40	20	10
4.5N	60	100	120	90	90	50	30	45	40	20	20	0
3.5N	50	80	80	90	70	50	20	40	30	10	10	*
2.5N	50	70	60	50	50	30	20	25	10	*	*	*
1.5N	90	90	50	40	30	20	20	10	*	*	*	*
0.5N	110	100	50	30	20	20	10	*	*	*	*	*

36.5 37.5 38.5 39.5 40.5 41.5 42.5 43.5 44.5 45.5 46.5 47.5

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	36.5	37.5	38.5	39.5	40.5	41.5	42.5	43.5	44.5	45.5	46.5	47.5
5.5S	*	*	*	*	*	*	*	*	*	*	*	*
6.5S	*	*	*	*	*	*	*	*	*	*	*	*
7.5S	*	*	*	*	*	*	*	*	*	*	*	*
8.5S	*	*	*	*	*	*	*	*	*	*	*	*
9.5S	*	*	*	*	*	*	*	*	*	*	*	*
10.5S	*	*	*	*	*	*	*	*	*	*	*	*
11.5S	*	*	*	*	*	*	*	*	*	*	*	*
12.5S	*	*	*	*	*	*	*	*	*	*	*	*
13.5S	*	*	*	*	*	*	*	*	*	*	*	*
14.5S	*	*	*	*	*	*	*	*	*	*	*	*
15.5S	*	*	*	*	*	*	*	*	*	*	*	*
16.5S	*	*	*	*	*	*	*	*	*	*	*	*
17.5S	*	*	*	*	*	*	*	*	*	*	*	*
18.5S	*	*	*	*	*	*	*	*	*	*	*	*
19.5S	*	*	*	*	*	*	*	*	*	*	*	*
20.5S	*	*	*	*	*	*	*	*	*	*	*	*
21.5S	*	*	*	*	*	*	*	*	*	*	*	*
22.5S	*	*	*	*	*	*	*	*	*	*	*	*
23.5S	*	*	*	*	*	*	*	*	*	*	*	*
24.5S	*	*	*	*	*	*	*	*	*	*	*	*
25.5S	*	*	*	*	*	*	*	*	*	*	*	*
26.5S	*	*	*	*	*	*	*	*	*	*	*	*
27.5S	*	*	*	*	*	*	*	*	*	*	*	*
28.5S	*	*	*	*	*	*	*	*	*	*	*	*
29.5S	*	*	*	*	*	*	*	*	*	*	*	*
30.5S	*	*	*	*	*	*	*	*	*	*	*	*
31.5S	*	*	*	*	*	*	*	*	*	*	*	*
32.5S	*	*	*	*	*	*	*	*	*	*	*	*
33.5S	*	*	*	*	*	*	*	*	*	*	*	*
34.5S	*	*	*	*	*	*	*	*	*	*	*	*
35.5S	*	*	*	*	*	*	*	*	*	*	*	*
36.5S	*	*	*	*	*	*	*	*	*	*	*	*
37.5S	*	*	*	*	*	*	*	*	*	*	0	12
38.5S	*	*	*	*	*	0	62	110	130	142	147	150
39.5S	15	*	*	7	82	130	150	167	182	197	212	222
40.5S	106	110	128	146	164	182	200	212	224	236	248	260
41.5S	198	210	220	230	240	250	260	268	276	284	292	300
42.5S	258	260	268	276	284	292	300	302	304	306	308	310
43.5S	308	310	314	318	322	326	330	328	326	324	322	320
44.5S	360	360	356	352	348	344	340	336	332	328	324	320
45.5S	360	360	356	352	348	344	340	336	332	328	324	320
46.5S	362	360	358	356	354	352	350	346	342	338	334	330
47.5S	362	360	358	356	354	352	350	348	346	344	342	340
48.5S	362	360	358	356	354	352	350	348	346	344	342	340
49.5S	362	360	360	360	360	360	360	358	356	354	352	350
50.5S	368	367	366	365	364	363	362	361	360	360	360	360
51.5S	361	362	363	364	365	366	367	368	369	370	371	372
52.5S	361	362	363	364	365	366	367	368	369	370	370	370
53.5S	351	352	353	354	355	356	357	358	359	360	361	362
54.5S	333	335	337	339	341	343	345	347	349	350	351	352
55.5S	303	305	3									

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5	57.5	58.5	59.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	0	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	0	0
74.5N	*	*	*	*	*	*	*	4	12	20	12	*
73.5N	*	*	*	*	*	*	2	8	14	20	*	*
72.5N	*	*	*	*	*	0	0	*	*	*	*	*
71.5N	*	*	*	*	0	0	0	0	*	*	*	*
70.5N	*	*	*	*	*	*	*	*	*	*	*	*
69.5N	*	*	*	*	*	*	*	*	*	*	*	*
68.5N	*	*	*	0	1	2	2	3	4	6	7	8
67.5N	2	5	7	7	6	6	8	9	9	9	10	10
66.5N	8	10	10	10	10	10	10	10	10	12	17	20
65.5N	17	20	20	20	20	20	20	20	20	20	20	25
64.5N	17	20	20	20	20	20	20	20	20	25	35	40
63.5N	17	20	20	20	20	20	20	20	20	30	50	50
62.5N	20	20	20	20	20	20	20	20	20	25	35	35
61.5N	20	20	20	20	20	20	20	20	20	25	35	37
60.5N	20	20	20	20	20	20	20	20	20	25	35	35
59.5N	20	20	20	20	20	20	20	20	20	27	42	42
58.5N	20	20	20	20	20	20	20	20	20	27	42	42
57.5N	20	20	20	20	20	20	20	20	20	27	42	45
56.5N	20	20	20	20	20	20	20	20	20	25	35	37
55.5N	20	20	20	20	20	20	20	20	20	27	42	45
54.5N	20	20	20	20	20	20	20	21	24	34	51	52
53.5N	20	20	20	20	20	20	20	22	27	35	45	47
52.5N	20	20	20	20	20	20	20	22	27	32	37	40
51.5N	20	20	20	20	20	20	20	20	20	22	27	32
50.5N	20	20	20	20	20	20	20	20	20	20	20	20
49.5N	10	10	10	10	10	20	20	20	20	20	20	20
48.5N	10	0	-1	-1	-2	10	20	20	20	20	20	20
47.5N	-1	-1	-2	-2	-2	-1	10	20	20	20	20	20
46.5N	-2	-3L	-3L	-3L	-3L	-2	-1	20	20	20	20	10
45.5N	-3L	-3L	-3L	-3L	-3L	-3	-2	20	20	20	10	6L

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

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TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	48.5	49.5	50.5	51.5	52.5	53.5	54.5	55.5	56.5	57.5	58.5	59.5
45.5S	*	*	*	*	*	*	*	*	*	*	*	*
46.5S	*	*	*	*	*	*	*	*	*	*	*	*
47.5S	*	*	*	*	*	*	*	*	*	*	*	*
48.5S	*	*	*	*	*	*	*	*	*	*	*	*
49.5S	*	*	*	*	*	*	*	*	*	*	*	*
50.5S	*	*	*	*	*	*	*	*	*	*	*	*
51.5S	*	*	*	*	*	*	*	*	*	*	*	*
52.5S	*	*	*	*	*	*	*	*	*	*	*	*
53.5S	*	*	*	*	*	*	*	*	*	*	*	*
54.5S	*	*	*	*	*	*	*	*	*	*	*	*
55.5S	*	*	*	*	*	*	*	*	*	*	*	*
56.5S	*	*	*	*	*	*	*	*	*	*	*	*
57.5S	*	*	*	*	*	*	*	*	*	*	*	*
58.5S	*	*	*	*	*	*	*	*	*	*	*	*
59.5S	*	*	*	*	*	*	*	*	*	*	*	*
60.5S	*	*	*	*	*	*	*	*	*	*	*	*
61.5S	*	*	*	*	*	*	*	*	*	*	*	*
62.5S	*	*	*	*	*	*	*	*	*	*	*	*
63.5S	*	*	*	*	*	*	*	*	*	*	*	*
64.5S	*	*	*	*	*	*	*	*	*	*	*	*
65.5S	*	*	*	*	*	*	*	*	*	*	*	*
66.5S	*	*	17	67	102	115	105	67	2	*	*	*
67.5S	17	35	65	95	125	135	125	115	105	87	62	42
68.5S	150	162	187	205	215	220	220	215	205	200	200	192
69.5S	227	235	245	252	257	260	260	260	260	257	252	242
70.5S	266	272	278	284	290	288	286	284	282	280	268	256
71.5S	302	304	306	308	310	302	294	286	278	270	256	242
72.5S	306	302	298	294	290	282	274	266	258	250	238	226
73.5S	312	304	296	288	280	270	260	250	240	230	224	218
74.5S	314	308	302	296	290	278	266	254	242	230	220	210
75.5S	316	312	308	304	300	294	288	282	276	270	260	250
76.5S	328	326	324	322	320	314	308	302	296	290	280	270
77.5S	336	332	328	324	320	312	304	296	288	280	274	268
78.5S	334	328	322	316	310	304	298	292	286	280	286	292
79.5S	346	342	338	334	330	328	326	324	322	320	322	324
80.5S	360	360	360	360	360	360	360	360	360	360	360	360
81.5S	373	374	375	376	377	378	379	380	380	380	380	380
82.5S	370	370	370	370	370	370	370	371	374	377	380	383
83.5S	363	364	365	366	367	368	369	370	371	372	373	374
84.5S	353	354	355	356	357	358	359	360	360	360	360	360
85.5S	323	324	325	326	327	328	329	330	331	332	333	334
86.5S	293	294	295	296	297	298	299	300	301	302	303	304
87.5S	290	290	290	290	290	290	290	290	290	290	290	290
88.5S	283	284	285	286	287	288	289	290	290	290	290	290
89.5S	283	284	285	286	287	288	289	290	290	290	290	290

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS												
DEGREES EAST LONGITUDE												
	60.5	61.5	62.5	63.5	64.5	65.5	66.5	67.5	68.5	69.5	70.5	71.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	0	0	0	*	*	*
75.5N	4	12	20	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	0	0	2
71.5N	*	*	*	*	*	*	*	*	0	1	3	4
70.5N	*	*	*	*	*	*	*	*	0	0	1	3
69.5N	6	10	10	8	5	2	*	*	2	4	4	4
68.5N	9	12	17	20	20	17	12	9	6	5	4	3
67.5N	10	12	17	25	35	37	32	25	15	9	7	6
66.5N	20	25	35	40	40	32	17	9	8	7	4	3
65.5N	35	40	40	35	25	17	12	9	8	7	6	5
64.5N	40	35	25	17	12	10	10	9	8	8	7	7
63.5N	30	20	20	17	12	10	10	10	10	10	9	9
62.5N	25	20	20	17	12	10	10	10	10	10	10	10
61.5N	32	27	22	20	20	17	12	10	10	10	10	10
60.5N	25	20	20	20	20	20	20	17	12	10	10	10
59.5N	27	20	20	20	20	20	20	17	12	10	10	10
58.5N	27	20	20	20	20	20	20	20	20	20	20	20
57.5N	35	27	22	20	20	20	20	20	20	20	20	20
56.5N	32	27	22	20	20	20	20	20	20	20	20	20
55.5N	35	27	22	20	20	20	20	20	20	20	20	20
54.5N	37	27	22	20	20	20	20	20	20	20	20	20
53.5N	42	35	25	20	20	20	20	20	20	20	20	20
52.5N	40	35	25	20	20	20	20	22	27	30	30	27
51.5N	37	37	32	27	22	22	27	30	30	30	30	32
50.5N	20	20	20	20	20	22	27	30	30	32	37	42
49.5N	20	20	20	20	20	20	30	50	45	40	40	40
48.5N	20	20	20	20	20	20	30	40	45	40	40	40
47.5N	20	20	20	20	20	20	20	30	35	30	40	50
46.5N	4	5	8	10	10	10	20	20	20	20	20	20
45.5N	6L	7	8	10	10	20	20	20	20	20	20	23



60.5 61.5 62.5 63.5 64.5 65.5 66.5 67.5 68.5 69.5 70.5 71.5

[illegible]

DEGREES EAST LONGITUDE

60.5	61.5	62.5	63.5	64.5	65.5	66.5	67.5	68.5	69.5	70.5	71.5
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[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	72.5	73.5	74.5	75.5	76.5	77.5	78.5	79.5	80.5	81.5	82.5	83.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	0	3	5	8	8
72.5N	4	5	5	6	6	7	8	8	9	9	10	10
71.5N	6	6	6	6	6	6	7	7	8	8	9	9
70.5N	5	6	6	7	7	8	8	8	9	9	9	9
69.5N	4	4	4	4	5	5	6	7	8	9	10	10
68.5N	2	2	1	1	1	3	6	8	9	10	10	12
67.5N	5	4	3	3	4	4	4	5	7	8	9	12
66.5N	3	3	4	5	6	7	8	9	10	10	10	12
65.5N	5	5	6	6	7	8	9	10	10	10	10	10
64.5N	7	7	7	7	8	8	9	9	10	10	10	12
63.5N	9	9	9	9	10	10	10	10	10	10	10	12
62.5N	10	10	10	10	10	10	10	10	10	12	17	20
61.5N	10	10	10	10	10	10	10	10	10	12	17	20
60.5N	10	10	10	10	10	10	10	10	10	12	17	20
59.5N	10	10	10	12	17	20	20	20	20	20	20	20
58.5N	20	20	20	20	20	20	20	20	20	20	20	20
57.5N	20	20	20	20	20	20	20	20	20	20	20	20
56.5N	20	20	20	20	20	20	20	20	20	20	20	20
55.5N	20	20	20	20	20	20	20	20	20	20	20	20
54.5N	20	20	20	20	20	20	20	20	20	20	20	22
53.5N	20	20	20	20	20	20	20	20	20	20	20	20
52.5N	22	20	20	20	20	20	20	20	20	20	20	22
51.5N	37	37	32	27	22	20	20	20	20	25	35	50
50.5N	47	50	50	47	42	35	25	22	27	37	52	80
49.5N	40	50	70	80	70	60	50	40	40	50	40	60
48.5N	40	50	80	90	80	50	50	50	60	50	40	50
47.5N	50	40	40	40	50	50	50	40	40	70	80	90
46.5N	30	30	30	30	30	35	35	40	40	40	50	60
45.5N	35	45	40	30	30	40	70	110	120	90	70	70

72.5 73.5 74.5 75.5 76.5 77.5 78.5 79.5 80.5 81.5 82.5 83.5

	72.5	73.5	74.5	75.5	76.5	77.5	78.5	79.5	80.5	81.5	82.5	83.5
44.5N	20	50	27L	60	40	50	80	160	200	170	180	140
43.5N	35	40	80	100	100	90	90	170	160	130	170	290
42.5N	200	280	310	240	200	200	350	560	610	570	430	370
41.5N	200	200	230	280	320	400	420	390	380	280	120	90
40.5N	110	230	320	310	250	200	200	190	160	110	90	85
39.5N	400	400	370	230	190	180	170	160	150	130	120	110
38.5N	390	420	570	500	200	190	180	160	160	160	140	130
37.5N	400	430	440	400	250	170	200	185	170	170	170	180
36.5N	310	350	330	540	370	380	410	330	230	260	390	430
35.5N	380	260	210	440	630	560	450	440	480	500	510	520
34.5N	170	230	250	370	370	440	490	490	460	500	510	520
33.5N	40	90	210	220	400	390	430	460	440	440	510	520
32.5N	40	30	30	50	210	320	430	440	480	490	480	490
31.5N	20	20	20	30	50	270	380	460	490	500	500	500
30.5N	20	20	20	30	40	90	150	360	410	570	510	480
29.5N	20	20	20	30	30	40	50	120	200	220	500	650
28.5N	20	20	30	40	40	20	20	20	20	70	240	290
27.5N	30	30	40	50	30	20	20	20	20	20	30	40
26.5N	20	40	50	40	30	20	20	20	20	20	20	20
25.5N	30	50	50	40	30	40	30	20	20	20	20	20
24.5N	30	50	50	40	50	50	40	30	30	30	30	30
23.5N	20	20	50	50	50	50	40	40	40	50	50	50
22.5N	10	20	30	30	30	40	70	40	40	50	30	40
21.5N	5	20	50	40	30	50	40	30	30	30	30	20
20.5N	*	40	40	50	40	40	30	30	40	50	40	35
19.5N	*	40	50	50	40	40	30	30	35	80	80	90
18.5N	*	60	50	50	40	40	40	40	25	60	60	40
17.5N	*	50	60	50	40	50	60	40	25	20	50	*
16.5N	*	10	60	50	40	40	40	35	20	50	*	*
15.5N	*	*	50	50	40	40	50	30	*	*	*	*
14.5N	*	*	30	60	40	50	40	30	*	*	*	*
13.5N	*	*	0	100	70	90	70	40	*	*	*	*
12.5N	*	*	*	50	60	70	50	20	*	*	*	*
11.5N	*	*	*	0	110	30	50	10	*	*	*	*
10.5N	*	*	*	*	50	70	25	10	*	*	*	*
9.5N	*	*	*	*	10	60	10	*	*	*	*	*
8.5N	*	*	*	*	*	50	*	*	30	*	*	*
7.5N	*	*	*	*	*	*	*	*	50	0	*	*
6.5N	*	*	*	*	*	*	*	*	80	0	*	*
5.5N	*	*	*	*	*	*	*	*	*	*	*	*
4.5N	*	*	*	*	*	*	*	*	*	*	*	*
3.5N	*	*	*	*	*	*	*	*	*	*	*	*
2.5N	*	*	*	*								

72.5 73.5 74.5 75.5 76.5 77.5 78.5 79.5 80.5 81.5 82.5 83.5

[illegible]

## DEGREES EAST LONGITUDE

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	84.5	85.5	86.5	87.5	88.5	89.5	90.5	91.5	92.5	93.5	94.5	95.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	0	0	0
79.5N	*	*	*	*	*	*	*	*	*	*	8	17
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	2	6	10	12	14	16
74.5N	1	4	7	10	12	14	16	18	20	20	20	20
73.5N	9	9	10	10	12	14	16	18	20	18	16	14
72.5N	10	10	10	10	10	10	10	10	10	10	10	10
71.5N	9	10	10	10	12	14	16	18	20	20	20	20
70.5N	9	10	10	10	12	14	16	18	20	20	20	20
69.5N	10	12	17	20	20	24	31	35	35	36	39	40
68.5N	17	20	20	20	20	22	27	37	52	65	75	77
67.5N	17	20	20	20	20	22	27	30	30	32	37	42
66.5N	17	20	20	20	20	21	24	26	29	32	37	37
65.5N	10	12	17	20	20	20	20	22	27	31	34	34
64.5N	17	20	20	20	20	20	20	20	20	20	20	20
63.5N	17	20	20	20	20	25	35	42	47	47	42	37
62.5N	20	20	20	20	20	24	31	36	39	40	40	42
61.5N	20	20	20	20	20	20	20	22	27	32	37	37
60.5N	20	20	20	20	20	25	35	40	40	45	55	55
59.5N	20	20	20	20	20	20	20	32	57	67	62	60
58.5N	20	20	20	20	20	17	12	15	25	32	37	37
57.5N	20	20	20	20	20	20	20	20	20	20	20	20
56.5N	20	20	20	20	20	20	20	22	27	30	30	30
55.5N	20	22	27	32	37	40	40	37	32	32	37	40
54.5N	27	32	37	50	70	70	50	42	47	60	80	87
53.5N	20	25	35	50	70	75	65	57	52	67	102	130
52.5N	27	35	45	60	80	90	90	102	127	127	102	95
51.5N	70	77	72	90	130	145	135	122	107	100	100	102
50.5N	120	137	132	145	175	180	160	140	120	115	125	137
49.5N	70	120	180	200	210	190	170	210	100	90	120	150
48.5N	70	80	85	190	270	250	200	150	100	90	120	160
47.5N	80	90	80	40	80	130	230	210	150	110	110	140
46.5N	60	50	50	50	60	70	90	100	160	200	170	180
45.5N	60	40	40	50	70	80	100	110	150	150	160	170

84.5 85.5 86.5 87.5 88.5 89.5 90.5 91.5 92.5 93.5 94.5 95.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE[illegible]

## 5 95 5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	96.5	97.5	98.5	99.5	100.5	101.5	102.5	103.5	104.5	105.5	106.5	107.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	0	*	*	*	*	*	*	*	*	*	*	*
79.5N	26	35	24	13	*	*	*	*	*	*	*	*
78.5N	*	*	2	9	16	23	30	20	10	*	*	*
77.5N	*	*	*	*	1	3	5	3	1	*	*	*
76.5N	*	*	0	5	10	15	20	18	16	14	12	10
75.5N	18	20	20	20	20	20	20	22	24	26	28	30
74.5N	20	20	18	16	14	12	10	10	10	10	10	10
73.5N	12	10	10	10	10	10	10	9	8	7	6	5
72.5N	10	10	10	10	10	10	10	12	14	16	18	20
71.5N	20	20	18	16	14	12	10	10	10	10	10	10
70.5N	20	20	20	20	20	20	20	20	20	20	20	20
69.5N	40	42	47	47	42	35	26	26	35	40	40	37
68.5N	72	62	47	37	32	27	22	22	27	32	37	40
67.5N	47	47	42	35	25	20	20	25	35	40	40	40
66.5N	32	30	30	32	37	35	25	25	35	40	40	40
65.5N	31	30	30	30	30	32	37	40	40	40	40	40
64.5N	20	20	20	20	20	25	35	42	47	47	42	37
63.5N	32	32	37	40	40	40	40	40	40	37	32	32
62.5N	47	50	50	47	42	42	47	47	42	40	40	40
61.5N	32	32	37	40	40	42	47	52	57	55	45	40
60.5N	45	37	32	30	30	32	37	42	47	47	42	40
59.5N	60	52	37	30	30	32	37	40	40	37	32	35
58.5N	32	32	37	39	36	36	39	40	40	37	32	32
57.5N	20	20	20	22	27	32	37	42	47	47	42	45
56.5N	30	30	30	32	37	42	47	52	57	55	45	50
55.5N	40	42	47	49	46	45	45	51	64	67	62	60
54.5N	82	77	72	62	47	45	55	57	52	55	65	65
53.5N	150	145	115	90	70	55	45	50	70	75	65	56
52.5N	105	122	147	150	130	102	67	52	57	52	37	42
51.5N	107	122	147	162	167	152	117	90	70	67	82	90
50.5N	152	152	137	127	122	117	112	105	95	87	82	82
49.5N	160	180	180	160	150	120	100	90	90	80	100	150
48.5N	180	180	180	170	170	160	110	100	90	110	120	170
47.5N	160	200	200	190	190	170	150	130	110	120	150	150
46.5N	190	200	200	200	200	200	190	190	180	170	160	150
45.5N	160	180	170	160	180	200	190	190	180	170	150	120

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	96.5	97.5	98.5	99.5	100.5	101.5	102.5	103.5	104.5	105.5	106.5	107.5
44.5N	120	150	170	180	180	180	190	200	180	160	150	120
43.5N	140	150	160	130	130	150	170	180	190	140	140	110
42.5N	180	170	150	130	100	110	160	170	180	170	150	130
41.5N	190	180	160	130	120	120	150	160	170	180	190	190
40.5N	170	160	170	170	170	170	160	160	180	190	170	140
39.5N	390	360	290	270	190	180	170	180	180	180	170	150
38.5N	410	400	400	400	340	330	250	190	180	170	170	140
37.5N	340	350	380	350	350	390	350	210	180	170	180	200
36.5N	330	280	400	400	330	330	340	220	170	250	180	170
35.5N	460	470	450	410	390	440	450	290	290	230	200	140
34.5N	460	440	460	480	390	410	390	390	280	160	130	120
33.5N	490	470	460	430	420	410	450	340	220	100	140	150
32.5N	490	470	450	450	400	390	420	240	120	80	100	110
31.5N	500	490	470	410	410	410	240	170	80	53	50	60
30.5N	480	470	490	370	440	480	180	100	50	40	40	45
29.5N	460	400	360	360	430	350	280	110	50	50	40	40
28.5N	340	270	320	300	400	310	250	260	90	40	80	80
27.5N	220	200	200	260	250	300	280	180	200	140	105	80
26.5N	100	140	200	230	220	290	220	190	200	200	100	70
25.5N	100	80	250	210	210	200	190	220	180	180	70	60
24.5N	30	80	190	180	190	190	200	190	90	70	50	40
23.5N	60	100	95	150	140	130	110	130	140	80	50	40
22.5N	90	90	80	190	90	120	60	60	40	40	40	20
21.5N	50	90	60	160	70	60	40	50	40	20	20	30
20.5N	70	80	52	140	40	50	50	90	50	20	0	*
19.5N	50	50	140	50	60	70	80	100	60	10	*	*
18.5N	40	50	100	40	40	50	40	40	50	40	*	*
17.5N	20	40	50	20	20	30	30	30	20	50	10	*
16.5N	0	10	80	30	20	20	20	20	20	20	40	10
15.5N	*	*	110	60	20	20	20	20	20	20	50	56
14.5N	*	*	80	50	10	20	20	20	20	30	20	60
13.5N	*	*	70	50	0	30	20	20	20	20	20	20
12.5N	*	*	10	50	*	5	20	30	20	20	20	40
11.5N	*	*	5	10	*	*	*	30	20	20	40	50
10.5N	*	*	10	5	*	*	*	0	5	10	5	5
9.5N	*	*	30	0	*	*	*	*	*	2	*	*
8.5N	*	*	30	40	*	*	*	*	*	*	*	*
7.5N	*	*	*	20	*	*	*	*	*	*	*	*
6.5N	*	*	*	0	10	10	*	*	*	*	*	*
5.5N	*	*	*	*	100	110	20	*	*	*	*	*
4.5N	190	170	*	*	20	120	130	5	*	*	*	*
3.5N	*	130	130	0	0	80	40	0	*	*	*	*
2.5N	*	0	140	85	*	5	10	5	*	*	*	*
1.5N	*	*	10	140	40	10	0	0	*	*	*	*
0.5N	*	*	*	170	150	20	5	0	*	*	*	*

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

96.5 97.5 98.5 99.5 100.5 101.5 102.5 103.5 104.5 105.5 106.5 107.5

[illegible]

96.5 97.5 98.5 99.5 100.5 101.5 102.5 103.5 104.5 105.5 106.5 107.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	108.5	109.5	110.5	111.5	112.5	113.5	114.5	115.5	116.5	117.5	118.5	119.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	7	5	2	*	*	*	*	*	*	*	*	*
75.5N	26	22	18	14	10	5	*	*	*	*	*	*
74.5N	8	5	*	*	*	*	*	*	*	*	*	*
73.5N	6	7	8	9	10	9	8	6	5	4	*	*
72.5N	18	16	14	12	10	10	10	9	9	9	11	13
71.5N	12	14	16	18	20	20	20	20	20	20	20	20
70.5N	20	20	20	20	20	22	24	26	28	30	28	26
69.5N	32	32	37	39	36	34	31	27	22	20	20	20
68.5N	40	37	32	30	30	30	30	27	22	20	20	20
67.5N	40	40	40	37	32	32	37	40	40	37	32	27
66.5N	40	40	40	40	40	40	40	40	40	37	32	27
65.5N	40	40	40	40	40	37	32	30	30	27	22	20
64.5N	32	30	30	27	22	20	20	20	20	20	20	20
63.5N	37	37	32	27	22	20	20	20	20	20	20	20
62.5N	40	37	32	30	30	27	22	20	20	20	20	20
61.5N	40	42	47	50	50	47	42	37	32	30	30	31
60.5N	40	40	40	40	40	37	32	30	30	30	30	30
59.5N	45	47	42	40	40	47	62	62	47	37	32	31
58.5N	37	40	40	42	47	62	87	95	85	75	65	57
57.5N	55	65	75	80	80	80	80	82	87	87	82	77
56.5N	70	82	87	92	97	97	92	90	90	90	90	90
55.5N	60	72	97	115	125	122	107	90	70	67	82	87
54.5N	55	45L	95	107	102	95	85	80	80	77	72	72
53.5N	45L	59	86	97	92	92	97	97	92	85	75	65
52.5N	67	82	87	92	97	95	85	77	72	67	62	65
51.5N	90	87	82	80	80	77	72	72	77	80	80	80
50.5N	87	90	90	87	82	77	72	72	77	77	72	72
49.5N	130	150	160	100	90	90	80	70	70	70	50	60
48.5N	190	160	150	130	110	90	80	80	70	70	70	85
47.5N	160	150	120	100	90	80	90	80	70	70	80	90
46.5N	140	120	100	100	100	100	110	100	80	70	75	100
45.5N	110	100	100	90	90	100	120	120	100	90	90	100

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	108.5	109.5	110.5	111.5	112.5	113.5	114.5	115.5	116.5	117.5	118.5	119.5
44.5N	100	90	90	80	90	100	120	130	120	110	130	70
43.5N	100	100	100	100	100	100	130	150	120	100	70	50
42.5N	120	150	150	140	150	150	170	180	190	200	90	40
41.5N	190	190	200	190	200	170	160	140	100	62	120	80
40.5N	110	110	110	150	170	180	120	60	20	20	40	70
39.5N	130	110	100	110	170	150	100	30	20	10	10	0
38.5N	120	110	90	150	140	100	30	20	10	5	*	*
37.5N	150	110	80	100	80	100	20	20	10	10	10	*
36.5N	180	100	70	100	130	70	20	20	20	50	60	25
35.5N	190	95	50	88	90	50	20	20	20	30	40	0
34.5N	80	40	80	90	21	50	20	20	20	20	20	10
33.5N	160	150	80	60	80	20	20	20	20	10	5	6
32.5N	70	50	60	40	20	50	20	20	20	20	20	10
31.5N	110	110	140	80	18	40	50	60	42	20	20	10
30.5N	70	80	70	30	20	20	20	20	19	40	50	38
29.5N	50	100	40	21	20	40	60	40	28	50	50	30
28.5N	80	50	50	50	21	45	40	18	20	40	70	70
27.5N	70	40	60	60	40	45	50	40	30	90	60	55
26.5N	52	50	70	70	40	70	55	50	90	40	30	20
25.5N	50	50	60	60	70	50	55	70	70	60	50	20
24.5N	30	40	40	65	80	50	130	65	30	40	0	*
23.5N	30	20	30	20	30	40	40	60	20	0	*	*
22.5N	40	40	70	50	30	0	0	*	*	*	*	*
21.5N	5	10	20	0	*	*	*	*	*	*	*	*
20.5N	*	0	0	*	*	*	*	*	*	*	*	*
19.5N	0	30	10	*	*	*	*	*	*	*	*	*
18.5N	0	50	*	*	*	*	*	*	*	*	*	*
17.5N	*	*	*	*	*	*	*	*	*	*	*	*
16.5N	*	*	*	*	*	*	*	*	*	*	*	*
15.5N	10	*	*	*	*	*	*	*	*	*	*	*
14.5N	50	*	*	*	*	*	*	*	*	*	*	*
13.5N	40	*	*	*	*	*	*	*	*	*	*	*
12.5N	70	*	*	*	*	*	*	*	*	*	*	*
11.5N	40	*	*	*	*	*	*	*	*	*	*	*
10.5N	*	*	*	*	*	*	*	*	*	*	*	*
9.5N	*	*	*	*	*	*	*	*	*	*	*	*
8.5N	*	*	*	*	*	*	*	*	*	*	*	*
7.5N	*	*	*	*	*	*	*	*	*	*	*	*
6.5N	*	*	*	*	*	*	*	*	20	0	*	*
5.5N	*	*	*	*	*	*	*	0	140	30	0	*
4.5N	*	*	*	*	*	*	20	30	80	50	*	*
3.5N	*	*	*	*	*	40	80	100	80	*	*	*
2.5N	*	*	*	0	20	50	130	120	40	0	*	*
1.5N	*	20	50	40	60	80	120	90	80	80	*	*
0.5N	*	80	110	110	100	90	70	70	55	2	*	*

108.5 109.5 110.5 111.5 112.5 113.5 114.5 115.5 116.5 117.5 118.5 119.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

108.5 109.5 110.5 111.5 112.5 113.5 114.5 115.5 116.5 117.5 118.5 119.5

[illegible]

120.5 121.5 122.5 123.5 124.5 125.5 126.5 127.5 128.5 129.5 130.5 131.5

[illegible]

2000

2000

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

120.5 121.5 122.5 123.5 124.5 125.5 126.5 127.5 128.5 129.5 130.5 131.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	132.5	133.5	134.5	135.5	136.5	137.5	138.5	139.5	140.5	141.5	142.5	143.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	2	3	4	5	6	7	6
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	*	*	*
71.5N	17	16	16	15	15	14	13	12	12	11	10	10
70.5N	10	12	14	16	18	20	20	20	20	20	20	20
69.5N	20	20	20	25	35	37	32	27	22	20	20	20
68.5N	22	20	20	27	42	47	42	35	25	20	20	20
67.5N	20	20	20	20	20	22	27	30	30	27	22	20
66.5N	22	20	20	20	20	25	35	40	40	37	32	40
65.5N	40	40	40	40	40	52	77	85	75	62	47	40
64.5N	80	85	95	95	85	85	95	92	77	62	47	42
63.5N	20	30	50	62	67	87	122	122	87	70	70	77
62.5N	20	20	20	30	50	72	97	110	110	110	110	107
61.5N	20	20	20	25	35	42	47	65	95	107	102	100
60.5N	22	20	20	27	42	52	57	67	82	80	60	50
59.5N	32	27	22	27	42	55	65	65	55	42	27	19
58.5N	47	46	39	39	46	60	80	80	60	35	*	*
57.5N	47	47	42	42	47	55	65	50	*	*	*	*
56.5N	50	44	51	54	51	42	27	12	*	*	*	*
55.5N	87	80	80	69	46	24	*	*	*	*	*	*
54.5N	57	45	35	21	4	*	*	*	*	*	*	*
53.5N	65	65	75	65	35	20	20	17	12	*	3	*
52.5N	72	82	87	75	45	27	22	17	12	10	10	*
51.5N	55	50	50	42	27	22	27	31	34	36	39	*
50.5N	55	60	60	52	37	36	49	57	61	64	68	47
49.5N	40	30	30	30	20	30	90	50	0	*	50	20
48.5N	20	20	20	20	40	100	80	50	*	*	10	*
47.5N	20	20	20	30	60	100	60	*	*	*	10	*
46.5N	40	20	20	35	50	80	*	*	*	*	0	0
45.5N	20	20	30	50	70	*	*	*	*	*	*	*

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

132.5 133.5 134.5 135.5 136.5 137.5 138.5 139.5 140.5 141.5 142.5 143.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

132.5 133.5 134.5 135.5 136.5 137.5 138.5 139.5 140.5 141.5 142.5 143.5

[illegible]

144.5 145.5 146.5 147.5 148.5 149.5 150.5 151.5 152.5 153.5 154.5 155.5

[illegible]



## DEGREES EAST LONGITUDE

144.5 145.5 146.5 147.5 148.5 149.5 150.5 151.5 152.5 153.5 154.5 155.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE  
144.5 145.5 146.5 147.5 148.5 149.5 150.5 151.5 152.5 153.5 154.5 155.5

[illegible]

## DEGREES EAST LONGITUDE

156.5 157.5 158.5 159.5 160.5 161.5 162.5 163.5 164.5 165.5 166.5 167.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE  
156.5 157.5 158.5 159.5 160.5 161.5 162.5 163.5 164.5 165.5 166.5 167.5

[illegible]

156.5 157.5 158.5 159.5 160.5 161.5 162.5 163.5 164.5 165.5 166.5 167.5

[illegible]

156.5 157.5 158.5 159.5 160.5 161.5 162.5 163.5 164.5 165.5 166.5 167.5

[illegible]

## 7.

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

DEGREES EAST LONGITUDE

168.5 169.5 170.5 171.5 172.5 173.5 174.5 175.5 176.5 177.5 178.5 179.5

[illegible]



TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

168.5 169.5 170.5 171.5 172.5 173.5 174.5 175.5 176.5 177.5 178.5 179.5

[illegible]

## DEGREES EAST LONGITUDE

180.5 181.5 182.5 183.5 184.5 185.5 186.5 187.5 188.5 189.5 190.5 191.5

[illegible]

180.5 181.5 182.5 183.5 184.5 185.5 186.5 187.5 188.5 189.5 190.5 191.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

180.5 181.5 182.5 183.5 184.5 185.5 186.5 187.5 188.5 189.5 190.5 191.5

[illegible]

[illegible][illegible]

192.5 193.5 194.5 195.5 196.5 197.5 198.5 199.5 200.5 201.5 202.5 203.5

[illegible]

192.5 193.5 194.5 195.5 196.5 197.5 198.5 199.5 200.5 201.5 202.5 203.5

[illegible]

## DEGREES EAST LONGITUDE

192.5 193.5 194.5 195.5 196.5 197.5 198.5 199.5 200.5 201.5 202.5 203.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE  
192.5 193.5 194.5 195.5 196.5 197.5 198.5 199.5 200.5 201.5 202.5 203.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE  
204.5 205.5 206.5 207.5 208.5 209.5 210.5 211.5 212.5 213.5 214.5 215.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

204.5 205.5 206.5 207.5 208.5 209.5 210.5 211.5 212.5 213.5 214.5 215.5

[illegible]

## DEGREES EAST LONGITUDE

204.5 205.5 206.5 207.5 208.5 209.5 210.5 211.5 212.5 213.5 214.5 215.5

[illegible]

DEGREES EAST LONGITUDE

204.5 205.5 206.5 207.5 208.5 209.5 210.5 211.5 212.5 213.5 214.5 215.5

[illegible]

216.5 217.5 218.5 219.5 220.5 221.5 222.5 223.5 224.5 225.5 226.5 227.5

[illegible]



## DEGREES EAST LONGITUDE

216.5 217.5 218.5 219.5 220.5 221.5 222.5 223.5 224.5 225.5 226.5 227.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

216.5 217.5 218.5 219.5 220.5 221.5 222.5 223.5 224.5 225.5 226.5 227.5

45.5S	*	*	*	*	*	*	*	*	*	*	*	*
46.5S	*	*	*	*	*	*	*	*	*	*	*	*
47.5S	*	*	*	*	*	*	*	*	*	*	*	*
48.5S	*	*	*	*	*	*	*	*	*	*	*	*
49.5S	*	*	*	*	*	*	*	*	*	*	*	*
50.5S	*	*	*	*	*	*	*	*	*	*	*	*
51.5S	*	*	*	*	*	*	*	*	*	*	*	*
52.5S	*	*	*	*	*	*	*	*	*	*	*	*
53.5S	*	*	*	*	*	*	*	*	*	*	*	*
54.5S	*	*	*	*	*	*	*	*	*	*	*	*
55.5S	*	*	*	*	*	*	*	*	*	*	*	*
56.5S	*	*	*	*	*	*	*	*	*	*	*	*
57.5S	*	*	*	*	*	*	*	*	*	*	*	*
58.5S	*	*	*	*	*	*	*	*	*	*	*	*
59.5S	*	*	*	*	*	*	*	*	*	*	*	*
60.5S	*	*	*	*	*	*	*	*	*	*	*	*
61.5S	*	*	*	*	*	*	*	*	*	*	*	*
62.5S	*	*	*	*	*	*	*	*	*	*	*	*
63.5S	*	*	*	*	*	*	*	*	*	*	*	*
64.5S	*	*	*	*	*	*	*	*	*	*	*	*
65.5S	*	*	*	*	*	*	*	*	*	*	*	*
66.5S	*	*	*	*	*	*	*	*	*	*	*	*
67.5S	*	*	*	*	*	*	*	*	*	*	*	*
68.5S	*	*	*	*	*	*	*	*	*	*	*	*
69.5S	*	*	*	*	*	*	*	*	*	*	*	*
70.5S	*	*	*	*	*	*	*	*	*	*	*	*
71.5S	*	*	*	*	*	*	*	*	*	*	*	*
72.5S	*	*	*	*	*	*	*	*	*	*	*	*
73.5S	*	*	*	*	*	*	*	*	*	*	*	*
74.5S	*	*	*	*	*	*	*	*	*	*	*	*
75.5S	*	*	*	*	0	0	8	25	42	60	77	94
76.5S	0	16	40	63	87	110	134	146	158	170	182	194
77.5S	74	84	89	94	100	105	110	119	128	138	147	156
78.5S	62	62	65	68	72	75	78	85	92	98	105	112
79.5S	45	52	54	57	59	62	64	68	73	77	82	86
80.5S	15	18	20	22	25	27	29	31	34	37	42	47
81.5S	17	20	23	26	29	32	35	38	40	43	45	47
82.5S	23	24	25	26	28	29	30	31	32	34	37	40
83.5S	15	17	19	21	23	25	27	29	31	33	35	37
84.5S	15	17	19	21	23	26	28	30	32	34	38	41
85.5S	62	59	57	54	51	48	46	43	40	43	52	60
86.5S	201	201	202	202	203	203	204	204	205	207	211	216
87.5S	270	270	270	270	269	269	269	269	269	269	268	267
88.5S	290	290	290	290	289	289	289	289	289	289	288	287
89.5S	290	290	290	290	289	289	289	289	289	289	288	287

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	228.5	229.5	230.5	231.5	232.5	233.5	234.5	235.5	236.5	237.5	238.5	239.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	0	0
72.5N	*	*	*	*	*	*	*	*	*	*	0	0
71.5N	*	*	*	*	*	*	*	*	*	*	*	*
70.5N	*	*	*	*	*	*	*	*	*	*	*	*
69.5N	8	14	18	19	16	13	9	7	7	7	8	7
68.5N	19	20	20	20	20	20	20	20	20	20	20	21
67.5N	20	20	20	21	24	26	28	29	28	27	25	23
66.5N	35	27	22	21	24	26	29	27	22	18	12L	12L
65.5N	71	60	45	36	32	31	34	34	31	12L	12L	12L
64.5N	110	106	99	87	72	59	46	36	29	24	21	21
63.5N	109	109	106	100	90	79	66	54	41	31	24	20
62.5N	85	92	97	100	100	94	81	65	45	31	24	20
61.5N	92	96	99	99	96	92	87	79	66	52	37	29
60.5N	105	102	97	90	80	74	71	66	59	52	47	46
59.5N	106	105	105	101	94	84	71	61	54	50	50	50
58.5N	126	135	145	157	172	172	157	137	112	90	70	59
57.5N	88	109	116	125	135	144	151	146	129	107	82	67
56.5N	19	48	79	110	140	159	166	160	140	119	96	80
55.5N	*	2	37	64	81	94	101	111	124	126	119	105
54.5N	*	*	7	34	61	81	94	100	100	107	122	131
53.5N	*	*	0	19	46	70	90	99	96	99	106	126
52.5N	*	*	*	*	4	33	61	81	94	97	92	99
51.5N	*	*	*	*	*	10	60	89	96	96	89	82
50.5N	*	*	*	*	*	0	17	54	71	80	80	76
49.5N	*	*	*	*	*	0	50	20	*	50	60	170
48.5N	*	*	*	*	*	*	*	30	0	20	50	110
47.5N	*	*	*	*	*	*	*	*	50	10	50	56
46.5N	*	*	*	*	*	*	*	*	40	50	270	50
45.5N	*	*	*	*	*	*	*	*	40	30	70	37

228.5 229.5 230.5 231.5 232.5 233.5 234.5 235.5 236.5 237.5 238.5 239.5

[illegible]

228.5 229.5 230.5 231.5 232.5 233.5 234.5 235.5 236.5 237.5 238.5 239.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	228.5	229.5	230.5	231.5	232.5	233.5	234.5	235.5	236.5	237.5	238.5	239.5
45.5S	*	*	*	*	*	*	*	*	*	*	*	*
46.5S	*	*	*	*	*	*	*	*	*	*	*	*
47.5S	*	*	*	*	*	*	*	*	*	*	*	*
48.5S	*	*	*	*	*	*	*	*	*	*	*	*
49.5S	*	*	*	*	*	*	*	*	*	*	*	*
50.5S	*	*	*	*	*	*	*	*	*	*	*	*
51.5S	*	*	*	*	*	*	*	*	*	*	*	*
52.5S	*	*	*	*	*	*	*	*	*	*	*	*
53.5S	*	*	*	*	*	*	*	*	*	*	*	*
54.5S	*	*	*	*	*	*	*	*	*	*	*	*
55.5S	*	*	*	*	*	*	*	*	*	*	*	*
56.5S	*	*	*	*	*	*	*	*	*	*	*	*
57.5S	*	*	*	*	*	*	*	*	*	*	*	*
58.5S	*	*	*	*	*	*	*	*	*	*	*	*
59.5S	*	*	*	*	*	*	*	*	*	*	*	*
60.5S	*	*	*	*	*	*	*	*	*	*	*	*
61.5S	*	*	*	*	*	*	*	*	*	*	*	*
62.5S	*	*	*	*	*	*	*	*	*	*	*	*
63.5S	*	*	*	*	*	*	*	*	*	*	*	*
64.5S	*	*	*	*	*	*	*	*	*	*	*	*
65.5S	*	*	*	*	*	*	*	*	*	*	*	*
66.5S	*	*	*	*	*	*	*	*	*	*	*	*
67.5S	*	*	*	*	*	*	*	*	*	*	*	*
68.5S	*	*	*	*	*	*	*	*	*	*	*	*
69.5S	*	*	*	*	*	*	*	*	*	*	*	*
70.5S	*	*	*	*	*	*	*	*	*	*	*	*
71.5S	*	*	*	*	*	*	*	*	*	*	*	*
72.5S	*	*	*	*	*	*	*	*	*	*	*	*
73.5S	*	*	*	*	*	*	*	*	*	*	*	*
74.5S	*	*	*	*	*	*	1	7	14	20	20	20
75.5S	106	117	129	140	152	154	155	157	158	160	158	157
76.5S	200	205	211	216	222	230	237	245	252	260	250	241
77.5S	162	167	173	178	184	187	190	194	197	200	199	198
78.5S	115	118	122	125	128	134	141	147	154	160	160	160
79.5S	92	98	104	110	116	121	126	132	137	142	144	147
80.5S	52	57	62	67	72	77	81	86	90	94	98	102
81.5S	49	51	53	56	58	60	62	65	68	71	74	78
82.5S	43	46	49	52	55	58	60	63	66	68	70	73
83.5S	39	41	43	46	48	50	52	55	58	61	64	67
84.5S	44	47	50	53	56	59	62	66	70	74	79	83
85.5S	69	77	86	94	103	111	120	126	131	135	139	144
86.5S	220	224	229	233	237	241	246	247	246	244	243	241
87.5S	266	265	264	263	262	261	260	260	260	260	260	260
88.5S	286	285	284	283	282	281	280	280	280	280	280	280
89.5S	286	285	284	283	282	281	280	280	280	280	280	280

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	240.5	241.5	242.5	243.5	244.5	245.5	246.5	247.5	248.5	249.5	250.5	251.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	*	*	*	*	*	*
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	*	*	*	0	0	0	4	11	12	12	13	13
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	0	9	18	15	12	10	*	*	*	*	*	*
72.5N	0	7	18	16	15	13	12	10	10	10	9	9
71.5N	*	*	0	4	9	13	18	22	23	24	26	27
70.5N	*	*	*	*	*	*	0	0	0	3	8	12
69.5N	3	*	*	*	*	3	10	15	18	20	20	20
68.5N	24	25	25	22	16	12	9	7	8	8	8	9
67.5N	21	20	20	20	20	19	16	14	11	11	12	14
66.5N	6	9	20	29	36	41	44	44	41	36	29	24
65.5N	9	10	15	23	34	42	47	50	50	50	50	46
64.5N	24	27	32	37	42	46	49	49	46	45	45	46
63.5N	20	21	24	27	32	36	39	40	40	41	44	46
62.5N	20	20	20	20	20	22	26	26	24	22	21	25
61.5N	26	24	21	16	7	16L	16L	19	25	33	41	46
60.5N	49	47	42	36	29	22	17	16	19	25	35	42
59.5N	50	49	46	44	41	37	32	27	22	19	16	16
58.5N	56	52	47	42	37	34	31	29	26	26	29	34
57.5N	62	59	56	54	51	52	57	59	56	52	47	46
56.5N	70	65	65	67	72	74	71	69	66	64	61	57
55.5N	85	74	71	71	74	75	75	76	79	79	78	74
54.5N	134	125	105	90	80	72	67	64	61	60	60	59
53.5N	159	174	171	151	114	87	72	64	61	59	56	54
52.5N	116	142	177	184	161	131	94	72	67	64	61	59
51.5N	77	91	124	144	151	139	106	85	75	69	66	64
50.5N	69	74	91	114	141	149	136	117	92	77	72	69
49.5N	60	60	80	90	100	150	100	90	80	70	70	70
48.5N	50	40	80	90	90	90	100	80	70	70	70	70
47.5N	40	40	80	130	120	100	170	120	90	90	90	80
46.5N	40	40	80	80	170	190	190	180	160	160	150	130
45.5N	48	80	80	90	100	170	190	170	180	180	180	160

## DEGREES EAST LONGITUDE

240.5 241.5 242.5 243.5 244.5 245.5 246.5 247.5 248.5 249.5 250.5 251.5

[illegible]

## DEGREES EAST LONGITUDE

240.5 241.5 242.5 243.5 244.5 245.5 246.5 247.5 248.5 249.5 250.5 251.5

[illegible]

240.5 241.5 242.5 243.5 244.5 245.5 246.5 247.5 248.5 249.5 250.5 251.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	252.5	253.5	254.5	255.5	256.5	257.5	258.5	259.5	260.5	261.5	262.5	263.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	*	*	*
80.5N	*	*	*	*	*	*	*	*	*	*	*	*
79.5N	*	*	*	*	*	*	*	*	*	*	*	*
78.5N	*	*	*	*	*	*	0	0	*	4	9	9
77.5N	*	*	*	*	*	*	*	*	*	*	*	*
76.5N	*	*	*	*	*	*	*	*	*	*	*	*
75.5N	14	13	12	11	10	10	9	9	9	8	8	8
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	9	8	7	6	6	5	5	4	4	4	4	3
71.5N	28	25	22	20	17	14	*	*	*	*	*	*
70.5N	16	16	17	17	17	18	16	14	12	10	8	8
69.5N	20	21	24	24	21	16	9	6	6	6	8	10
68.5N	9	8	7	5	*	*	*	*	*	1	5	7
67.5N	16	17	16	14	11	10	10	9	9	10	10	10
66.5N	21	20	20	20	20	19	16	15	15	16	19	20
65.5N	39	31	24	20	20	19	16	14	11	10	10	11
64.5N	49	49	46	41	34	27	22	19	16	14	11	10
63.5N	49	49	46	41	34	27	22	20	20	19	16	14
62.5N	35	42	47	49	46	41	34	27	22	19	16	14
61.5N	49	50	50	49	46	42	37	32	27	22	17	14
60.5N	47	50	50	50	50	50	50	47	42	36	27	20
59.5N	19	25	35	42	47	50	50	47	42	35	25	17
58.5N	41	46	49	50	50	50	50	47	42	36	29	22
57.5N	49	50	50	50	50	35L	50	47	42	36	29	22
56.5N	52	50	50	50	50	49	46	41	34	27	22	19
55.5N	66	61	57	54	51	49	46	41	34	26	19	14
54.5N	56	54	51	49	46	42	37	32	27	22	17	14
53.5N	51	50	50	49	46	42	37	31	24	22L	12	11
52.5N	56	54	51	50	50	49	46	40	30	24	22L	20
51.5N	61	59	56	54	51	50	50	45	35	25	15	11
50.5N	66	64	61	60	60	59	56	50	40	30	20	15
49.5N	70	70	70	60	60	50	50	50	50	30	10	20
48.5N	70	80	70	60	60	60	50	50	40	49	32	20
47.5N	80	90	90	70	60	60	50	50	50	40	40	30
46.5N	90	80	80	90	80	75	75	60	50	50	40	40
45.5N	130	140	130	110	90	70	60	50	50	40	40	40

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

[illegible]

252.5 253.5 254.5 255.5 256.5 257.5 258.5 259.5 260.5 261.5 262.5 263.5

[illegible]

252.5 253.5 254.5 255.5 256.5 257.5 258.5 259.5 260.5 261.5 262.5 263.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	264.5	265.5	266.5	267.5	268.5	269.5	270.5	271.5	272.5	273.5	274.5	275.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	*	*	*	*	*	*	*
81.5N	*	*	*	*	*	*	*	*	*	0	0	0
80.5N	*	*	*	*	*	*	*	*	*	0	0	0
79.5N	*	*	0	0	7	16	24	33	42	50	58	66
78.5N	9	9	9	9	9	9	9	9	10	10	11	12
77.5N	*	*	*	*	*	*	*	*	0	0	2	5
76.5N	0	0	2	6	9	12	14	17	20	20	20	20
75.5N	9	9	9	9	11	13	15	17	19	22	26	29
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	0	0	1	6	10	15	19	24	24	23	23
72.5N	1	0	*	*	*	*	*	*	0	*	2	8
71.5N	1	4	8	11	12	13	14	15	16	16	16	17
70.5N	7	7	6	6	7	8	8	9	10	10	11	11
69.5N	10	10	10	10	9	7	3	*	*	*	*	*
68.5N	9	10	10	11	14	14	13	9	3	*	3	6
67.5N	10	11	14	16	19	18	15	13	10	9	10	12
66.5N	20	20	20	20	20	19	16	13	10	7	6	5
65.5N	14	16	19	19	16	13	9	6	4	3	3	1
64.5N	10	10	10	10	10	10	10	8	5	*	3	6
63.5N	13	12	12	11	9	5	*	*	*	*	0	2
62.5N	11	10	9	7	3	*	*	*	*	*	*	*
61.5N	11	8	4	*	*	*	*	*	*	*	*	*
60.5N	15	9	3	*	*	*	*	*	*	*	*	*
59.5N	11	6	2	*	*	*	*	*	*	*	*	*
58.5N	17	13	8	3	*	*	*	*	*	*	*	*
57.5N	17	13	9	5	2	*	*	*	*	*	*	*
56.5N	16	13	10	8	7	6	5	3	*	*	*	*
55.5N	11	10	10	9	9	9	8	7	5	2	*	*
54.5N	11	10	10	10	10	10	10	10	10	10	10	9
53.5N	14	15	15	14	11	11	14	16	19	19	16	13
52.5N	17	16	19	20	20	20	20	20	20	19	16	13
51.5N	14	16	19	20	20	20	20	20	20	20	20	19
50.5N	15	17	22	26	29	29	26	24	21	20	20	20
49.5N	20	20	20	20	20	30	20	20	20	20	20	20
48.5N	20	30	30	20	20	30	20	18L	18L	5	20	20
47.5N	30	20	20	30	20	18L	18L	18L	18L	18L	18L	20
46.5N	40	30	30	30	20	20	30	30	20	20	20	20
45.5N	40	30	30	30	20	20	30	20	20	18L	18L	10

264.5 265.5 266.5 267.5 268.5 269.5 270.5 271.5 272.5 273.5 274.5 275.5

[illegible]

Number of hauls	A. balearicum (%)	Y. ciliatum (%)	B. setacea (%)
1	~90	~10	~5
2	~95	~20	~5
3	~95	~40	~5
4	~95	~60	~5
5	~95	~80	~5
6	~95	~80	~5
7	~95	~80	~5
8	~95	~80	~5
9	~95	~80	~5
10	~95	~80	~5

[illegible]

264.5 265.5 266.5 267.5 268.5 269.5 270.5 271.5 272.5 273.5 274.5 275.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	276.5	277.5	278.5	279.5	280.5	281.5	282.5	283.5	284.5	285.5	286.5	287.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	*	*	*	*	*	0	0	0	0	3	11	19
81.5N	0	0	3	10	18	25	32	39	46	50	49	49
80.5N	0	0	3	6	9	12	15	18	21	24	27	29
79.5N	74	82	74	67	59	52	44	38	31	25	18	*
78.5N	13	13	17	20	23	26	30	25	19	14	9	*
77.5N	7	10	12	14	16	18	20	*	*	*	*	*
76.5N	20	20	18	17	15	14	*	*	*	*	*	*
75.5N	33	36	33	30	28	25	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	22	22	23	24	26	27	28	18	9	*	*	*
72.5N	15	22	24	25	27	28	30	26	21	17	*	*
71.5N	17	17	17	17	17	17	17	21	26	30	35	39
70.5N	12	12	14	15	17	18	20	21	22	24	25	26
69.5N	0	1	*	*	*	*	*	1	5	11	20	34
68.5N	11	11	7	*	*	*	*	*	*	*	4	16
67.5N	15	16	15	10	*	*	*	*	*	*	*	0
66.5N	5	3	*	*	*	*	*	2	5	8	9	9
65.5N	*	*	*	*	*	*	*	5	10	14	17	18
64.5N	12	10	*	*	*	*	*	0	3	7	8	8
63.5N	2	*	*	*	*	*	*	*	*	*	*	*
62.5N	*	*	*	*	*	*	*	*	*	*	*	*
61.5N	*	*	*	*	*	*	0	3	9	11	10	7
60.5N	*	*	*	*	*	*	0	2	6	8	9	10
59.5N	*	*	*	*	*	*	0	3	9	14	18	19
58.5N	*	*	*	*	*	*	0	6	12	16	19	19
57.5N	*	*	*	*	*	*	1	6	12	16	19	20
56.5N	*	*	*	*	*	*	2	7	12	16	19	20
55.5N	*	*	*	*	*	*	3	7	12	17	22	27
54.5N	7	3	*	*	*	1	7	14	21	27	32	37
53.5N	8	4	1	*	3	6	12	17	22	29	36	42
52.5N	9	6	3	*	*	1	6	11	17	24	31	39
51.5N	16	13	8	6	6	8	13	16	19	22	27	32
50.5N	20	20	20	20	20	20	20	21	24	26	29	30
49.5N	20	20	20	20	20	20	20	20	20	20	20	20
48.5N	20	20	20	20	20	20	20	20	20	20	20	20
47.5N	20	20	20	20	20	20	20	20	20	20	20	30
46.5N	20	20	20	20	20	30	30	30	20	20	20	20
45.5N	18L	18L	18L	18L	20	30	30	20	20	20	20	30

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	276.5	277.5	278.5	279.5	280.5	281.5	282.5	283.5	284.5	285.5	286.5	287.5
44.5N	15	18L	9	30	20	20	20	20	25	60	35	30
43.5N	20	18L	20	20	10	6	8L	3	30	40	20	30
42.5N	20	20	18L	18L	20	40	40	25	30	40	30	20
41.5N	20	18L	20	20	40	50	40	40	40	35	30	8
40.5N	20	20	20	30	30	40	30	25	25	20	5	*
39.5N	20	20	20	30	60	35	20	20	8	5	*	*
38.5N	20	20	30	50	90	40	20	0	4	*	*	*
37.5N	40	50	60	70	40	20	10	5	*	*	*	*
36.5N	40	50	90	50	20	20	10	5	*	*	*	*
35.5N	90	90	30	20	20	10	5	0	*	*	*	*
34.5N	50	20	20	20	10	6	0	*	*	*	*	*
33.5N	20	20	10	7	4	*	*	*	*	*	*	*
32.5N	20	10	7	0	*	*	*	*	*	*	*	*
31.5N	10	8	3	*	*	*	*	*	*	*	*	*
30.5N	7	8	0	*	*	*	*	*	*	*	*	*
29.5N	*	5	10	*	*	*	*	*	*	*	*	*
28.5N	*	0	7	0	*	*	*	*	*	*	*	*
27.5N	*	*	6	5	*	*	*	*	*	*	*	*
26.5N	*	*	5	4	*	*	*	*	*	*	*	*
25.5N	*	*	*	0	*	*	*	*	*	*	*	*
24.5N	*	*	*	*	*	*	*	*	*	*	*	*
23.5N	*	*	*	*	*	*	*	*	*	*	*	*
22.5N	2	0	0	30	0	*	*	*	*	*	*	*
21.5N	*	*	*	*	*	5	20	*	*	*	*	*
20.5N	*	*	*	*	*	*	*	70	0	*	*	*
19.5N	*	*	*	*	*	*	*	*	*	*	*	40
18.5N	*	*	*	*	*	*	*	*	*	*	*	0
17.5N	*	*	*	*	*	*	*	*	*	*	*	*
16.5N	*	*	*	*	*	*	*	*	*	*	*	*
15.5N	0	*	*	*	*	*	*	*	*	*	*	*
14.5N	5	*	*	*	*	*	*	*	*	*	*	*
13.5N	0	*	*	*	*	*	*	*	*	*	*	*
12.5N	0	*	*	*	*	*	*	*	*	*	*	*
11.5N	*	*	*	*	*	*	*	*	*	*	*	9
10.5N	8	*	*	*	*	*	*	*	*	10	120	70
9.5N	130	10	*	*	5	*	*	*	5	10	30	20
8.5N	0	80	90	40	*	15	15	15	20	10	70	30
7.5N	*	*	*	20	*	*	40	80	40	40	70	130
6.5N	*	*	*	*	*	*	*	160	100	60	100	220
5.5N	*	*	*	*	*	*	*	100	150	90	250	150
4.5N	*	*	*	*	*	*	*	120	280	130	100	30
3.5N	*	*	*	*	*	*	*	200	110	180	40	30
2.5N	*	*	*	*	*	0	20	270	95	69	40	30
1.5N	*	*	*	*	*	10	160	170	70	30	30	30
0.5N	*	*	*	*	20	150	300	45	20	20	20	30

285 5 286 5 2

[illegible]

276.5 277.5 278.5 279.5 280.5 281.5 282.5 283.5 284.5 285.5 286.5 287.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	288.5	289.5	290.5	291.5	292.5	293.5	294.5	295.5	296.5	297.5	298.5	299.5
89.5N	*	*	*	*	*	*	*	*	*	*	*	*
88.5N	*	*	*	*	*	*	*	*	*	*	*	*
87.5N	*	*	*	*	*	*	*	*	*	*	*	*
86.5N	*	*	*	*	*	*	*	*	*	*	*	*
85.5N	*	*	*	*	*	*	*	*	*	*	*	*
84.5N	*	*	*	*	*	*	*	*	*	*	*	*
83.5N	*	*	*	*	*	*	*	*	*	*	*	*
82.5N	27	34	42	50	58	66	74	77	74	71	69	66
81.5N	48	47	47	46	46	45	45	42	38	34	30	26
80.5N	31	34	36	39	41	43	46	46	44	42	41	39
79.5N	*	*	*	*	*	*	*	*	0	0	15	32
78.5N	5	6	7	7	8	23	38	54	69	84	90	95
77.5N	*	*	*	0	0	14	30	46	62	78	87	96
76.5N	*	*	*	0	0	0	19	41	62	84	90	95
75.5N	*	*	*	*	*	*	*	*	*	*	*	*
74.5N	*	*	*	*	*	*	*	*	*	*	*	*
73.5N	*	*	*	*	*	*	*	*	*	*	*	*
72.5N	*	*	*	*	*	*	*	*	*	*	*	*
71.5N	*	*	*	*	*	*	*	*	*	*	*	*
70.5N	28	31	33	36	38	22	*	*	*	*	*	*
69.5N	51	59	56	45	24	*	*	*	*	*	*	*
68.5N	34	46	54	48	29	*	*	*	*	*	*	*
67.5N	2	9	21	36	55	61	54	36	*	*	*	*
66.5N	7	7	10	13	18	20	20	21	24	19	6	*
65.5N	19	21	24	21	14	*	*	*	*	*	*	*
64.5N	8	10	15	23	34	35	25	*	*	*	*	*
63.5N	0	13	26	30	26	23	20	14	5	*	*	*
62.5N	*	*	*	*	3	5	3	*	*	*	*	*
61.5N	*	*	*	*	*	*	*	*	*	*	*	*
60.5N	10	7	2	*	*	*	*	*	*	*	*	*
59.5N	16	11	4	*	*	*	4	12	16	*	*	*
58.5N	16	13	10	9	8	12	20	24	25	18	*	*
57.5N	20	20	20	20	20	22	27	34	41	38	24	*
56.5N	20	20	20	21	24	27	32	36	39	34	21	*
55.5N	32	36	39	41	44	46	49	50	50	47	42	30
54.5N	42	46	49	50	50	50	50	50	50	50	50	47
53.5N	47	50	50	50	50	50	50	50	50	46	39	31
52.5N	46	50	50	52	57	64	71	75	75	70	60	51
51.5N	37	40	40	39	36	36	39	45	55	57	52	44
50.5N	30	30	30	27	22	17	12	10	10	10	10	7
49.5N	20	20	10	10	0	*	*	*	*	*	*	*
48.5N	20	20	3	0	40	50	40	10	*	*	*	*
47.5N	40	40	10	20	30	40	10	*	*	*	*	*
46.5N	20	40	30	30	20	10	7	0	0	*	*	10
45.5N	50	40	20	10	10	0	10	5	25	20	5	*

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	288.5	289.5	290.5	291.5	292.5	293.5	294.5	295.5	296.5	297.5	298.5	299.5
4.5N	40	20	10	5	*	*	20	10	*	*	*	*
3.5N	30	5	*	*	*	*	0	*	*	*	*	*
2.5N	20	*	*	*	*	*	*	*	*	*	*	*
1.5N	0	0	*	*	*	*	*	*	*	*	*	*
0.5N	*	*	*	*	*	*	*	*	*	*	*	*
39.5N	*	*	*	*	*	*	*	*	*	*	*	*
38.5N	*	*	*	*	*	*	*	*	*	*	*	*
37.5N	*	*	*	*	*	*	*	*	*	*	*	*
36.5N	*	*	*	*	*	*	*	*	*	*	*	*
35.5N	*	*	*	*	*	*	*	*	*	*	*	*
34.5N	*	*	*	*	*	*	*	*	*	*	*	*
33.5N	*	*	*	*	*	*	*	*	*	*	*	*
32.5N	*	*	*	*	*	*	*	*	*	*	*	*
31.5N	*	*	*	*	*	*	*	*	*	*	*	*
30.5N	*	*	*	*	*	*	*	*	*	*	*	*
29.5N	*	*	*	*	*	*	*	*	*	*	*	*
28.5N	*	*	*	*	*	*	*	*	*	*	*	*
27.5N	*	*	*	*	*	*	*	*	*	*	*	*
26.5N	*	*	*	*	*	*	*	*	*	*	*	*
25.5N	*	*	*	*	*	*	*	*	*	*	*	*
24.5N	*	*	*	*	*	*	*	*	*	*	*	*
23.5N	*	*	*	*	*	*	*	*	*	*	*	*
22.5N	*	*	*	*	*	*	*	*	*	*	*	*
21.5N	*	*	*	*	*	*	*	*	*	*	*	*
20.5N	*	*	*	*	*	*	*	*	*	*	*	*
19.5N	80	0	*	*	*	*	*	*	*	*	*	*
18.5N	90	50	0	*	*	*	*	*	*	*	*	*
17.5N	*	*	*	*	*	*	*	*	*	*	*	*
16.5N	*	*	*	*	*	*	*	*	*	*	*	*
15.5N	*	*	*	*	*	*	*	*	*	*	*	*
14.5N	*	*	*	*	*	*	*	*	*	*	*	*
13.5N	*	*	*	*	*	*	*	*	*	*	*	*
12.5N	*	*	*	*	*	*	*	*	*	*	*	*
11.5N	*	0	10	*	*	*	*	*	*	*	*	*
10.5N	6	40	60	30	30	40	*	*	30	0	10	*
9.5N	*	90	50	30	30	30	20	30	30	9	5	*
8.5N	170	170	20	20	20	20	20	20	20	10	5	0
7.5N	50	20	20	20	20	20	20	50	30	30	20	20
6.5N	30	20	20	20	20	50	60	40	40	50	35	30
5.5N	20	20	20	20	30	70	60	50	50	80	100	78
4.5N	20	20	20	20	40	40	70	60	50	50	85	75
3.5N	20	20	20	20	20	30	35	60	50	40	20	20
2.5N	20	20	20	20	20	20	30	40	50	32	19	20
1.5N	30	20	20	20	20	20	33	40	20	20	24	20
0.5N	20	20	20	20	20	20	30	20	20	20	10	20

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	288.5	289.5	290.5	291.5	292.5	293.5	294.5	295.5	296.5	297.5	298.5	299.5
0.5S	20	20	20	20	20	20	20	20	20	20	20	20
1.5S	20	20	20	20	20	20	20	20	20	10	20	20
2.5S	20	20	20	20	20	10	10	10	10	10	10	10
3.5S	20	20	20	20	20	10	10	10	10	10	10	10
4.5S	20	20	20	20	20	20	20	20	20	10	10	10
5.5S	20	20	20	20	20	20	20	20	20	20	20	20
6.5S	20	20	20	20	20	20	20	20	20	20	20	20
7.5S	20	20	20	20	20	20	20	20	20	20	20	20
8.5S	30	20	20	20	20	20	20	20	20	20	20	20
9.5S	40	30	20	20	20	20	20	20	20	20	20	20
10.5S	50	50	41	35	29	35	20	20	20	20	20	20
11.5S	80	50	40	40	30	20	20	20	20	20	20	20
12.5S	200	65	30	40	40	20	20	20	20	20	20	20
13.5S	420	160	80	60	20	20	20	20	20	20	20	20
14.5S	440	440	410	270	30	30	20	20	20	20	20	30
15.5S	460	370	320	370	90	90	37	20	20	20	30	30
16.5S	290	400	420	490	370	290	91	60	30	30	30	30
17.5S	0	260	490	410	450	480	340	250	100	40	30	40
18.5S	*	*	360	520	360	470	290	190	110	30	30	40
19.5S	*	*	290	420	350	450	260	140	90	30	30	20
20.5S	*	*	180	470	340	410	270	150	100	40	20	20
21.5S	*	*	140	430	420	400	220	180	90	30	20	20
22.5S	*	*	140	350	560	380	300	160	70	20	20	20
23.5S	*	*	160	250	430	340	270	90	20	20	20	20
24.5S	*	0	170	490	360	370	140	80	27	20	20	20
25.5S	*	10	400	550	470	250	160	76	30	20	20	20
26.5S	*	60	290	370	340	300	150	60	20	20	20	10
27.5S	*	60	310	370	220	150	100	34	20	20	20	10
28.5S	180	155	310	180	190	95	80	33	20	20	20	10
29.5S	*	260	240	160	150	40	40	30	34	20	20	10
30.5S	20	330	210	85	90	70	40	70	28	20	20	10
31.5S	*	330	250	83	77	70	80	90	30	20	10	12
32.5S	0	230	250	70	52	70	80	80	30	20	10	14
33.5S	20	190	290	80	50	70	75	40	20	20	10	8
34.5S	30	300	220	87	75	50	47	20	20	10	10	8
35.5S	35	300	160	170	50	30	30	20	20	20	10	10
36.5S	200	330	200	160	50	30	20	20	20	20	20	20
37.5S	130	180	160	70	40	30	20	20	20	50	40	30
38.5S	170	120	73	40	40	30	20	30	30	33	30	12
39.5S	170	75	50	50	50	30	20	20	20	0	*	*
40.5S	100	72	90	100	70	30	10	7	9	0	*	*
41.5S	120	110	100	90	80	80	50	*	0	*	*	*
42.5S	100	67	70	100	70	38	30	0	*	*	*	*
43.5S	83	88	70	50	30	20	10	*	*	*	*	*
44.5S	120	80	90	50	30	20	5	*	*	*	*	*

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[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	300.5	301.5	302.5	303.5	304.5	305.5	306.5	307.5	308.5	309.5	310.5	311.5
44.5N	*	*	*	*	*	*	*	*	*	*	*	*
43.5N	*	*	*	*	*	*	*	*	*	*	*	*
42.5N	*	*	*	*	*	*	*	*	*	*	*	*
41.5N	*	*	*	*	*	*	*	*	*	*	*	*
40.5N	*	*	*	*	*	*	*	*	*	*	*	*
39.5N	*	*	*	*	*	*	*	*	*	*	*	*
38.5N	*	*	*	*	*	*	*	*	*	*	*	*
37.5N	*	*	*	*	*	*	*	*	*	*	*	*
36.5N	*	*	*	*	*	*	*	*	*	*	*	*
35.5N	*	*	*	*	*	*	*	*	*	*	*	*
34.5N	*	*	*	*	*	*	*	*	*	*	*	*
33.5N	*	*	*	*	*	*	*	*	*	*	*	*
32.5N	*	*	*	*	*	*	*	*	*	*	*	*
31.5N	*	*	*	*	*	*	*	*	*	*	*	*
30.5N	*	*	*	*	*	*	*	*	*	*	*	*
29.5N	*	*	*	*	*	*	*	*	*	*	*	*
28.5N	*	*	*	*	*	*	*	*	*	*	*	*
27.5N	*	*	*	*	*	*	*	*	*	*	*	*
26.5N	*	*	*	*	*	*	*	*	*	*	*	*
25.5N	*	*	*	*	*	*	*	*	*	*	*	*
24.5N	*	*	*	*	*	*	*	*	*	*	*	*
23.5N	*	*	*	*	*	*	*	*	*	*	*	*
22.5N	*	*	*	*	*	*	*	*	*	*	*	*
21.5N	*	*	*	*	*	*	*	*	*	*	*	*
20.5N	*	*	*	*	*	*	*	*	*	*	*	*
19.5N	*	*	*	*	*	*	*	*	*	*	*	*
18.5N	*	*	*	*	*	*	*	*	*	*	*	*
17.5N	*	*	*	*	*	*	*	*	*	*	*	*
16.5N	*	*	*	*	*	*	*	*	*	*	*	*
15.5N	*	*	*	*	*	*	*	*	*	*	*	*
14.5N	*	*	*	*	*	*	*	*	*	*	*	*
13.5N	*	*	*	*	*	*	*	*	*	*	*	*
12.5N	*	*	*	*	*	*	*	*	*	*	*	*
11.5N	*	*	*	*	*	*	*	*	*	*	*	*
10.5N	*	*	*	*	*	*	*	*	*	*	*	*
9.5N	*	*	*	*	*	*	*	*	*	*	*	*
8.5N	*	*	*	*	*	*	*	*	*	*	*	*
7.5N	10	0	*	*	*	*	*	*	*	*	*	*
6.5N	10	8	0	*	*	*	*	*	*	*	*	*
5.5N	40	10	9	10	10	10	0	*	*	*	*	*
4.5N	41	20	20	20	20	10	10	10	*	*	*	*
3.5N	20	20	23	40	20	20	20	10	10	*	*	*
2.5N	20	20	20	30	30	40	20	20	20	*	*	*
1.5N	30	20	20	30	30	30	20	20	10	5	*	*
0.5N	20	20	20	19	30	20	20	20	10	0	*	*

DEGREES EAST LONGITUDE

300.5 301.5 302.5 303.5 304.5 305.5 306.5 307.5 308.5 309.5 310.5 311.5

300.5 301.5 302.5 303.5 304.5 305.5 306.5 307.5 308.5 309.5 310.5 311.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

312.5 313.5 314.5 315.5 316.5 317.5 318.5 319.5 320.5 321.5 322.5 323.5



## DEGREES EAST LONGITUDE

312.5 313.5 314.5 315.5 316.5 317.5 318.5 319.5 320.5 321.5 322.5 323.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

	312.5	313.5	314.5	315.5	316.5	317.5	318.5	319.5	320.5	321.5	322.5	323.5
45.5S	*	*	*	*	*	*	*	*	*	*	*	*
46.5S	*	*	*	*	*	*	*	*	*	*	*	*
47.5S	*	*	*	*	*	*	*	*	*	*	*	*
48.5S	*	*	*	*	*	*	*	*	*	*	*	*
49.5S	*	*	*	*	*	*	*	*	*	*	*	*
50.5S	*	*	*	*	*	*	*	*	*	*	*	*
51.5S	*	*	*	*	*	*	*	*	*	*	*	*
52.5S	*	*	*	*	*	*	*	*	*	*	*	*
53.5S	*	*	*	*	*	*	*	*	*	*	*	*
54.5S	*	*	*	*	*	*	*	*	*	*	*	*
55.5S	*	*	*	*	*	*	*	*	*	*	*	*
56.5S	*	*	*	*	*	*	*	*	*	*	*	*
57.5S	*	*	*	*	*	*	*	*	*	*	*	*
58.5S	*	*	*	*	*	*	*	*	*	*	*	*
59.5S	*	*	*	*	*	*	*	*	*	*	*	*
60.5S	*	*	*	*	*	*	*	*	*	*	*	*
61.5S	*	*	*	*	*	*	*	*	*	*	*	*
62.5S	*	*	*	*	*	*	*	*	*	*	*	*
63.5S	*	*	*	*	*	*	*	*	*	*	*	*
64.5S	*	*	*	*	*	*	*	*	*	*	*	*
65.5S	*	*	*	*	*	*	*	*	*	*	*	*
66.5S	*	*	*	*	*	*	*	*	*	*	*	*
67.5S	*	*	*	*	*	*	*	*	*	*	*	*
68.5S	*	*	*	*	*	*	*	*	*	*	*	*
69.5S	*	*	*	*	*	*	*	*	*	*	*	*
70.5S	*	*	*	*	*	*	*	*	*	*	*	*
71.5S	*	*	*	*	*	*	*	*	*	*	*	*
72.5S	*	*	*	*	*	*	*	*	*	*	*	*
73.5S	*	*	*	*	*	*	*	*	*	*	*	*
74.5S	*	*	*	*	*	*	*	*	*	*	*	*
75.5S	*	*	*	*	*	*	*	*	*	*	*	*
76.5S	*	*	*	*	*	*	*	*	*	*	*	*
77.5S	*	*	*	*	*	*	*	*	*	*	*	*
78.5S	20	19	19	18	18	17	15	13	11	10	8	10
79.5S	36	39	42	44	47	50	42	34	26	18	10	9
80.5S	16	15	15	15	15	16	16	17	18	18	19	19
81.5S	12	12	11	12	13	14	15	17	18	19	21	22
82.5S	41	42	42	43	46	48	51	53	56	58	61	63
83.5S	151	150	149	149	148	147	147	146	146	145	144	144
84.5S	248	250	252	250	244	237	231	225	219	213	206	200
85.5S	225	226	228	228	227	226	225	224	223	222	221	220
86.5S	223	226	229	230	230	230	230	230	229	229	229	229
87.5S	257	258	259	258	257	256	255	254	253	252	251	250
88.5S	260	260	260	260	260	260	260	260	260	260	260	260
89.5S	279	279	279	279	278	277	276	275	274	273	272	271

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

324.5 325.5 326.5 327.5 328.5 329.5 330.5 331.5 332.5 333.5 334.5 335.5

DEGREES EAST LONGITUDE

324.5 325.5 326.5 327.5 328.5 329.5 330.5 331.5 332.5 333.5 334.5 335.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

DEGREES EAST LONGITUDE

324.5 325.5 326.5 327.5 328.5 329.5 330.5 331.5 332.5 333.5 334.5 335.5

[illegible]

## DEGREES EAST LONGITUDE

324.5 325.5 326.5 327.5 328.5 329.5 330.5 331.5 332.5 333.5 334.5 335.5

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

336.5 337.5 338.5 339.5 340.5 341.5 342.5 343.5 344.5 345.5 346.5 347.5

[illegible]

347 5



1

1

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

348.5 349.5 350.5 351.5 352.5 353.5 354.5 355.5 356.5 357.5 358.5 359.5

[illegible]

## DEGREES EAST LONGITUDE

348.5 349.5 350.5 351.5 352.5 353.5 354.5 355.5 356.5 357.5 358.5 359.5

[illegible]

100

100

[illegible]

TERRAIN HEIGHTS ABOVE MEAN SEA LEVEL IN DECAMETERS  
DEGREES EAST LONGITUDE

348.5 349.5 350.5 351.5 352.5 353.5 354.5 355.5 356.5 357.5 358.5 359.5

[illegible]

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